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ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND IL

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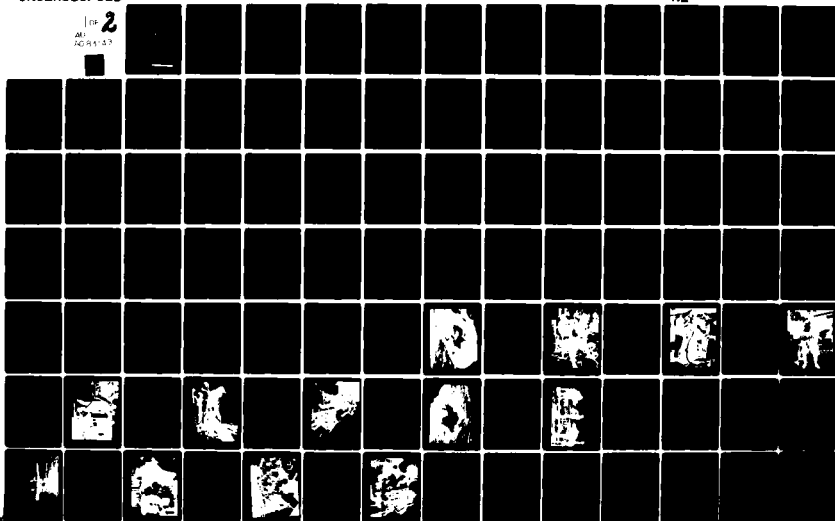
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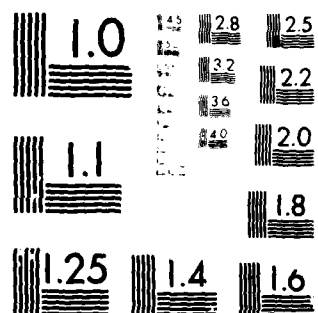
JUL 77 J R HAGER, D L WILKING, T J WASH

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MICROCOPY RESOLUTION TEST CHART  
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle)		5. TYPE OF REPORT & PERIOD COVERED
FINAL REPORT ON CLASSIFIED SCRAP IN LAKE SUPERIOR		Final Report August 1959 - July 1977
6. AUTHOR		7. PERFORMING ORG. REPORT NUMBER
CPT James R. Hager MAJ Daniel L. Wilking Thomas J. Wash		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
Headquarters, US Army Armament Materiel Readiness Command - DRSAR-ISE Rock Island, IL 61299		
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE
Headquarters, US Army Armament Materiel Readiness Command - DRSAR-ISE Rock Island, IL 61299		8 Jul 1977
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES
LEVEL		95
		15. SECURITY CLASS. (of this report)
		Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
Classified waste disposal, demilitarization, underwater disposal, environmental controversy, grenade production scrap.		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
Report contains the results and data on the investigation of dumping of classified waste into Lake Superior. Investigation was the result of inquiries based on the secretive nature of dumping of classified grenade scrap during 1959-1962 timeframe.		

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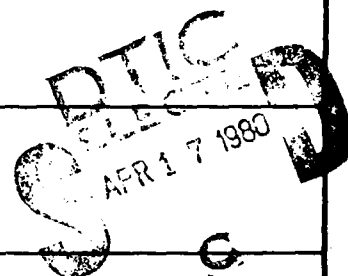
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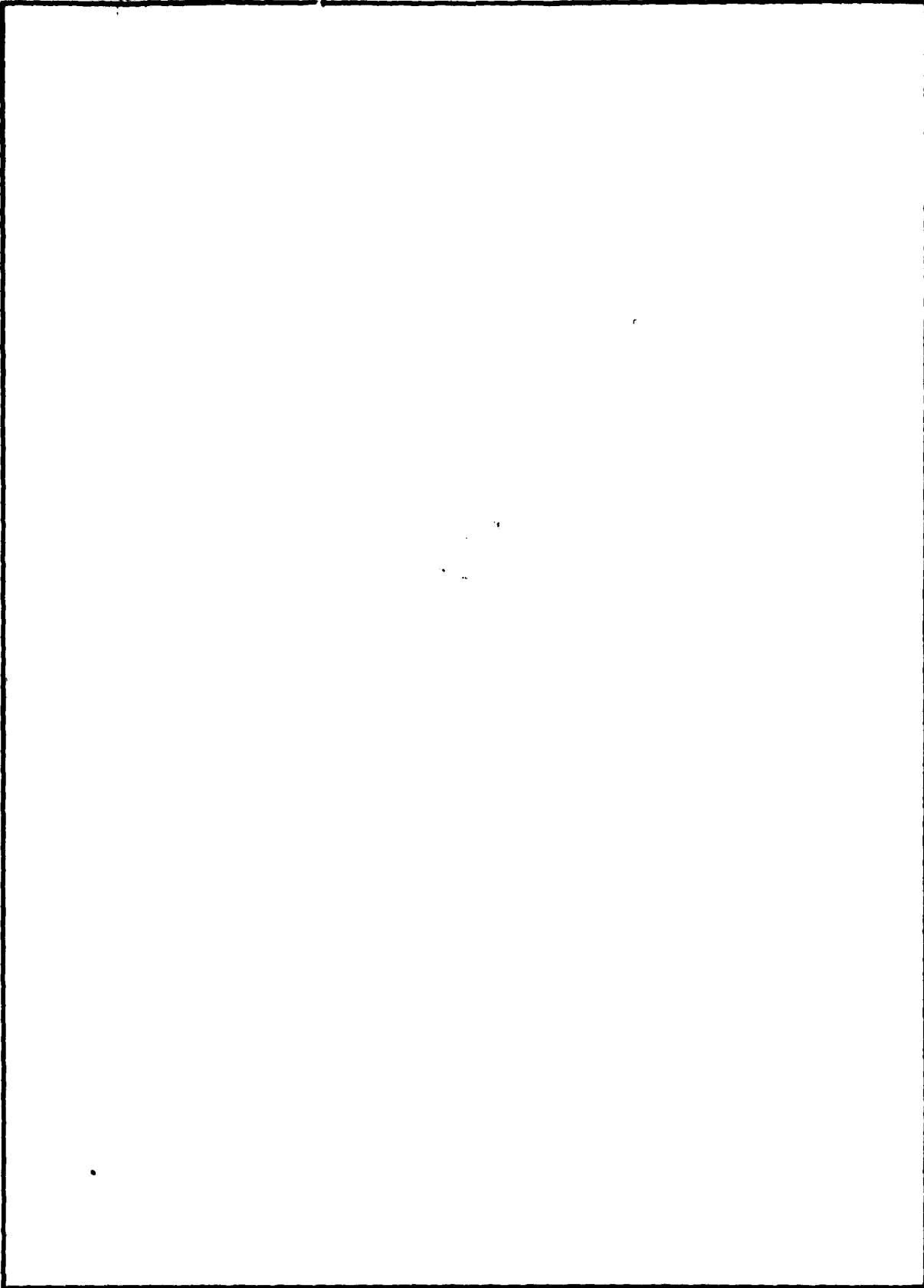
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THE LIFE OF

FINAL REPORT  
ON  
CLASSIFIED SCRAP IN LAKE SUPERIOR  
8 July 1977

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DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	<input type="checkbox"/>

- HQ, US ARMY ARMAMENT MATERIEL READINESS COMMAND  
ROCK ISLAND, ILLINOIS 61299

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## **Final Report on Classified Scrap in Lake Superior**

### **BACKGROUND**

During the 1959-62 timeframe, the US Army dumped some 1,437 barrels into Lake Superior. Recent rumors that the contents of the 55 gallon barrels were radioactive have caused much public concern. News media coverage (Appendix A) and citizen inquiries have resulted in Governmental requests (Appendix B) to prove that the dumped material is not harmful. The St. Paul District Corps of Engineers has tried to assure all interested parties that the material dumped was scrap metal from classified munitions production. Concern is such that hard evidence on the barrel content is needed. The action to resolve the issue was given to HQ, ARRCOM. CPT James R. Hager, DRSAR-ISC, was appointed the investigating officer.

Twin Cities Army Ammunition Plant (TCAAP), formerly Twin Cities Ordnance Plant, is under the jurisdiction of HQ, ARRCOM. TCAAP is a Government-owned, contractor-operated military industrial installation located approximately 13 miles north of Minneapolis - St. Paul, Minnesota. The prime contractor at the plant is Federal Cartridge Corporation with Honeywell, Inc. (Minneapolis Honeywell Regulator Company during the timeframe under study) as a tenant activity. Honeywell has occupied Buildings 103 and 502 on the installation since the 1950's. Their mission, then and now, in Building 103 is the assembly of fuzes and the fabrication of ferrous and non-ferrous metal parts with turning, stamping and casting operations accomplished in Building 502.

### **INVESTIGATIVE METHODOLOGY**

The procedure for determining the content of the barrels was to obtain copies of the manufacturing contracts and specifications and to obtain sworn statements from knowledgeable personnel. The Records Retention Center in St. Louis, MO was visited and contract documents obtained. Technical specifications of the material dumped were obtained from various Army organizations. Sworn affidavits were obtained from as many persons as possible who had firsthand knowledge or had participated in the disposal action.

### **INVESTIGATIVE FINDINGS**

The investigative findings are in Appendix C. Item C-1, dated 25 Aug 59, contains a list of special purpose equipment used in Building 502. None of this special equipment is for handling or processing radioactive material. Additionally, the statements (C-2 and C-3 respectively) of Mr. Al Ruby, a Honeywell employee who helped pour the concrete caps on the barrels, and MAJ Milton Rothman, the Army's contract administrator, testify that the material was not handled in any special manner as would be required with radioactive material. Furthermore, Mr. Larry Eiler,

Honeywell's Public Relations Director, stated that Honeywell was not working with any radioactive material on any project during the time-frame involved. In support of all of this evidence, the water sample analysis, C-6, taken on 4 Dec 76 from the lake surface in the vicinity of a suspected dump site shows no difference between water samples taken near the bottom of the lake and at a surface point up-current. In fact, there was no detectable difference in general water quality among the sample points.

The material that was dumped into Lake Superior was metal scrap produced under Contract DA-11-022-ORD-3019 and associated contracts. The items produced under this contract, dated 15 Dec 59, are listed in C-8. Manufacture of the top and base section assembly for the M32 Grenade and the succeeding family of grenades - notably the M40 - produced the majority of the scrap. The M40 Grenade differed from the M32 in diameter only and its metallic composition was identical (verified in C-9). The metallic specifications for the M40 are listed as aluminum and steel (C-10 through C-12).

Mr. John G. Heren (C-13) states that the scrap was disposed of by dumping in Lake Superior because there were no smelting facilities cleared to handle classified material and that the volume of scrap produced was too large to store and safeguard. Appendices C-15 through C-23, dated Sep and Oct 59, show that alternate methods of disposal were being sought. These records also verify that the scrap was produced under Contract 3019 in Building 502 and that dumping was necessary due to the large accumulation of scrap material and the delay in arriving at another disposal method. The alternate method of disposal finally adopted was melting the scrap in the US Steel Corporation furnaces in Duluth. This was verified by Mr. Dennis Nylén of that corporation.

The documents inclosed clearly show that, except for no more than six barrels, the material dumped into Lake Superior was classified aluminum and steel scrap. This residue from grenade production is non-nuclear, non-toxic, and non-hazardous. The material was dumped into Lake Superior because that was the most economical and secure disposal method available at the time. The six barrels that were not loaded in Building 502 came from the Honeywell Hopkins Plant and contain, to the best recollection of those interviewed, fiberglass tape impregnated with lithium chloride, potassium chloride, barium chromate, calcium chromate, and zirconium. This material was the scrap from a thermal battery used on a time fuze. No reason has been found for their inclusion in the Lake Superior dumps. However, the composition of the salt mix impregnated on the tapes was classified. While the data collected on the six barrels is not conclusive, there is no reason to believe they contained anything other than what has been testified. These barrels had holes in them to insure their sinking and have had constant exposure to the water since 1959. In order to evaluate the potential impact on water quality of these barrels, a worst case situation was presented to the US Army Environmental Hygiene Agency.

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Their evaluation is at C-24, which concludes that this disposal action will have a negligible effect on Lake Superior.

#### RECOVERY ACTIONS

With the melting of winter ice on Lake Superior, HQ, ARRCOM initiated action to exhume a barrel for content analysis. On 21 May 77, Patrol Squadron VP 4046, an antisubmarine unit located at NAS Glenview, Illinois, flew over Lake Superior. Using sophisticated detection equipment, the patrol was unable to verify barrel location.

On 7 Jun 77, the 86th Engineer Detachment (Diving) set up diving equipment aboard the "Coleman", US Army Corps' derrick boat. The "Coleman" anchored at the suspected dump site and diving apparatus was checked out. An underwater television camera was used to scan the dump site 130 feet below. No visual contact was made within the area scanned from the perimeter of the "Coleman". Photographs of the diving team and apparatus are in Appendix D.

On 8 Jun 77, the "Coleman" again set anchor over the suspected dump site. The underwater camera was used to scan the bottom. The diving crew made six dives during the day. Divers were in water ranging from 120 to 133 feet. An underwater SONAR device was used by the divers without success. Divers observed marks or "tracks" in the 3-inch thick silt which possibly could be attributed to barrels that were pushed by lake currents into deeper water.

On 9 Jun 77, the "Coleman" anchored west of the previous search area. The search routine was repeated without success. When it became apparent that barrels might not be in the immediate search area, COL Gay, St. Paul District Engineer, arranged for Dr. Thomas Johnson, an expert in underwater detection from the University of Minnesota, to bring his equipment from Minneapolis. Dr. Johnson had located the suspected site several months earlier.

On 10 Jun 77, the tugboat, "Duluth", carried Dr. Johnson to the suspected dump site. Using his equipment, Dr. Johnson attempted to relocate barrels in the vicinity of his previous find. The area that provided the strongest indication of barrels below on Dr. Johnson's equipment was searched via the underwater camera with negative results. Search operations of this nature continued until rough water caused the search equipment to give faulty results. By that time, it was apparent that the suspected dump area was void of barrels. Because no other suspected barrel dump site was known and search costs were \$4000 per day, not including Government personnel salaries, further search efforts were called off at 1500 hours.

#### MEDIA COORDINATION

A public affairs desk was established at Duluth by Mr. Peter Copeland, Chief of ARRCOM Public Affairs Office, to coordinate with the news media.



All information pertaining to the recovery effort was handled through this centralized office. As a result of earlier press releases (Appendix E, E-1 and E-2), the following media representatives were on hand to observe the operation:

- (1) Pioneer Press, St. Paul, MN
- (2) Duluth Herald News Tribune
- (3) Associated Press, St. Paul
- (4) United Press International, MN
- (5) WCCD-TV (ABC affiliate), St. Paul
- (6) KMSP-TV (CBS affiliate), MN
- (7) KSTP-TV (NBC affiliate), St. Paul
- (8) KDAC-TV, Duluth
- (9) KDAC-AM/FM, Duluth
- (10) WDID-TV, Duluth
- (11) KBJR-TV, Duluth

On 8 Jun 77, the first day of diving, the press boarded the tugboat "Lake Superior" and were briefed on the search operation by COL William Green, Chief of Staff, HQ, ARRCOM. Photographs are provided in Appendix F. The press observed the diving attempts and talked to crew members for approximately four hours before returning to Duluth to file their stories. This was repeated the following day as the area of search was moved from the original marker buoy. Mr. Copeland remained in Duluth to handle press inquiries while maintaining close radio contact with COL Green.

On the third day, 10 Jun 77, the press did not depart with the search team, but waited at Duluth. The media was advised of the arrival of Dr. Johnson. A press release (Appendix G, G-1) was prepared to cover the possible termination of the search effort. It was given to media in attendance upon COL Green's return to the OCE Duluth Area Office at 1600 hours. COL Green held a press conference based upon the release and a question and answer session followed.

Media publications received during the search effort are contained in Appendix G (G-2 through G-9). Additionally, three articles (G-10 through G-12) appeared after the search was terminated. Copies of additional news items will be forwarded as appropriate.

#### CONCLUSIONS

1. Suspected dump site does not contain barrels.
2. No barrel dump site locations are known at this time.
3. To continue search operations without a starting point would be counterproductive, especially at \$4000 per day.

4. Contents of the barrels have never had a significant toxic effect of any nature -- chemical, physical, or radiological -- upon the water and biological life of Lake Superior.

5. Contents of the barrels have conclusively been established and are/were of no environmental consequence.

6. Press relations during the search operation were excellent, and the media was kept fully informed of all search details.

7. Reporting of events in printed and electronic media were fair and accurate.

8. The efforts made to resolve the barrel controversy outweigh the adverse public reaction generated when the matter was initially brought to light.

#### RECOMMENDATIONS

1. Discontinue the barrel search.
2. Provide copies of this report to interested parties.
3. Place this report in the Army's permanent records.

## LAKE SUPERIOR'S MYSTERY BARRELS

For the past nine years, minnows, brook trout, and other species of fish swimming in Lake Superior around Duluth, Minn., have shown erratic spawning patterns, unusual sensitivities to copper, respiratory difficulties, and other abnormalities. Several hundred feet below the fish, more than 1,400 concrete-sealed metal barrels containing waste from a classified project at Honeywell Inc., have been quietly rusting away ever since the Army Corps of Engineers dumped them there between 1959 and 1962.

Although a Honeywell spokesman swears that the barrels contain nothing more than "scrap metal, which is low-carbon steel cast into a zinc alloy," Minnesota officials fear a more sinister connection between the barrels' contents and the fish's plight.

The issue reached a head a few weeks ago when Donald I. Mount, director of the Environmental Protection Agency's research laboratory in Duluth, released the results of tests on water samples taken from the lake in December. Although he admitted that the tests do not disprove Honeywell's contention, he also emphasized that they "don't prove that the barrels don't contain radioactive material, just that radioactive material is not leaking out of them in sufficient amounts to be measured."

Lost records. The Minnesota Pollution Control Agency wants more proof of harmlessness--specifically, the original contract for the project, which would contain the metallurgical specifications. "If the Corps doesn't locate the contract during the winter," says Louis J. Breimhurst, the PCA's water quality director, "we may ask them to raise a barrel, or a few barrels in the spring."

Both producing the contract and raising the barrels may be easier said than done. The Honeywell project involved work on artillery shell casings and antipersonnel fragmentation devices, but because it was classified, the company has no copy of the contract. James E. Braatz, public affairs chief for the Corps' St. Paul district, says the Army's copy might have been lost in a St. Louis warehouse fire in 1973.

Without the contract, no one can prove that the barrels all contain the same substances. "To be absolutely sure, all the barrels would have to be raised and opened," warns J. David Yount, deputy director of the EPA lab. "The cost of raising all the barrels would be astronomical, and I'm not even sure that it's technically or humanly possible," counters Braatz, who adds that the cost of raising even one or two drums would be \$50,000.

A 'dumb' move. Braatz is convinced that the issue is being overblown--two Duluth newspapers and the St. Paul Dispatch ran sizable stories on the situation last month--but neither he nor anyone at Honeywell can explain why the Corps would dump scrap metal in the first place. After 1962, scrap from the project was melted down in a Duluth steel mill, and Braatz says that he does not know why it was not all disposed of that way. "It was dumb to put the barrels in Lake Superior," he admits.

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The EPA's Mount agrees that the public may be reacting too strongly to the issue. "I think it's the secrecy of the whole affair that's caused public concern," he says. Mount notes that his laboratory analyzed water samples for several potentially harmful metals, for organic pollutants, and for radioactivity, yet turned up nothing. Still, even he is not content to leave the barrels--and the Corps--in peace. While the Corps searches for its documents, he says, "we're going to keep a close watch on the water, and we'll immediately check water samples when we see any changes."

BUSINESS WEEK: January 24, 1977

POLLUTION CONTROL

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

PCA CALLS FOR ANALYSIS  
OF DUMPED WASTE BARRELS

Barrels dumped into Lake Superior between 1959 and 1962 containing classified military wastes should be retrieved for analysis, John Pegors of the Duluth Office of the State Pollution Control Agency (PCA) said today.

Six shipments of classified waste were dumped into the lake by the US Army Corps of Engineers between October 1959 and September 1962, Government sources acknowledge.

They indicated the waste was produced by Honeywell Inc., and was said to be scrap metal, non-toxic, non-contaminant and non-radioactive.

Pegors said that if the analysis of the materials shows it is harmless, the PCA will write off the incident. "The question I have is why they went to such extremes for non-contaminant material," he said.

The 350 tons of material were brought to Duluth under military police escort and dumped, according to Corps records, into Lake Superior at depths of 100, 200 and 300 feet.

In 1968, a Duluth fisherman, Stanley Sivertson, picked up several of the large barrels while trawling in depths of about 150 feet about one mile northeast of the Lakewood pumping station.

He said the barrels, which weighed almost a ton each, created a hazard aboard ship in the swelling lake and were dumped back into the lake. But, one was opened by a crewman who said the contents looked like buckshot or bits of metal which had been melted and mixed with concrete, Sivertson said.

In a story in today's editions, the Chequamegon Sun in Washburn, Wis., quotes a Honeywell representative as saying the barrels "absolutely did not contain radioactive or hazardous materials."

This is apparently confirmed by a spokesman for the National Security Branch, Energy Research and Development Administration (ERDA), who said Honeywell has never had a contract for nuclear arms. ERDA is the Government agency responsible for such records.

Spokesmen for the Minneapolis-based firm have been quoted as saying the drums contained scrap metal left over from production of experimental artillery warheads.

Honeywell spokesmen were quoted as saying that the once-classified project is now declassified.

Honeywell and the Department of Army have been asked by the Duluth Herald and News-Tribune to provide more specific information on the contents of the barrels and the reason they were disposed of such manner.

The barrels were lined with concrete for ballast, said Lt. Col. Norman Hintz, acting engineer for the Corps' St. Paul district, in a letter earlier this month to the Save Lake Superior Association.

He said the contents were "iron ammunition hardware of a classified security nature, and of non-toxic, non-contaminant material." After 1962, the material was delivered to US Steel Corp's Duluth Works to be melted in blast furnaces.

DULUTH HERALD

DULUTH, MINN

20 AUG 76

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
1135 U. S. Post Office and Custom House  
St. Paul, Minnesota 55101

OFFICIALS ASK CHECK ON WASTES DUMPED INTO LAKE

By THE ASSOCIATED PRESS

Michigan officials, acting on the unsubstantiated story of a retired tug-boat skipper, want the Federal Government to find out exactly what was contained in more than 1,400 sealed barrels the Army dumped secretly into Lake Superior 14 years ago.

Although they have no hard evidence, state officials are following up a rumor that the barrels, in 100 to 300 feet of water near the Duluth shoreline, might contain radioactive waste materials.

The Army Corps of Engineers said Monday, the barrels hold classified, non-radioactive scrap metal, produced during the manufacture of secret weapons used in Viet Nam. The corps admits there were 1,437 containers dumped between 1959 and 1962.

The dumping was brought to state attention by Marilyn Burton of Sault Ste. Marie, who asked Department of Natural Resources Director Howard Tanner during a Marquette meeting if he had heard a story that the Army dumped radioactive material into Lake Superior.

Danford E. Anderson, now in his early 70s and retired in the Soo, was the skipper of a Duluth-based tug on May 24, 1961. Army records show a secret shipment of 180 barrels was delivered to Anderson for dumping.

Anderson's wife, Gertrude, was at the dock with her husband. She said they were told by "someone" that the barrels "contained stuff from the atomic plant near St. Paul."

Minnesota pollution control officials said there were no nuclear facilities in the state at that time. They added they have checked out Anderson's story and have all but dismissed it.

The Andersons have been telling friends about the strange night-time operation for years, but it was only when Mrs. Burton brought it up to Tanner that the state got wind of it.

Preliminary DNR investigation turned up another witness to the dumpings, 50-year-old Leonard Yeo of Laurium in the Upper Peninsula.

Yeo said he remembered participating in the dumping operation and being disturbed by its secrecy. He told the Detroit Free Press he had no reason to believe the barrels contained nuclear waste.



Michigan officials say they will press their investigation, and may demand the Federal Government dredge up one or more of the sunken barrels so the contents can be examined and analyzed.

Col. Forrest Gay, head of the Engineers office in St. Paul, said the Pentagon told him it would not object to that, since the scrap metal has been declassified. But, he added, there is no money in his budget to salvage the barrels.

FAIRMONT DAILY SENTINEL

2 NOVEMBER 1976

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

MILITARY SCRAP DUMPED IN LAKE SAID NO THREAT

DULUTH, Minn. (AP) - Military scrap dumped into Lake Superior between 1959 and 1962 consisted of ordinary metal, a Pentagon spokesman says.

"The only thing that is down there in those barrels is medium carbon steel and maybe some aluminum shavings," the spokesman said Friday.

The waste was left over from production of experimental artillery warheads, he said, and had been machined for fragmentation in a unique, secret pattern. It was dumped in the lake to keep it secret.

Between October 1959 and September 1962, six loads of scrap totaling more than 350 tons were shipped to Duluth from Honeywell Inc., Minneapolis, in sealed steel drums which were loaded aboard Corps of Engineers barges, taken onto the lake and dumped.

Corps records refer to the material as "classified." The Pentagon representative said that, at the time, the fragmentation pattern was "very secret" but the warheads have since been used in Vietnam and have been declassified.

The Pentagon explanation did not satisfy John Pegors, director of the Duluth office, Minnesota Pollution Control Agency (MPCA).

Pegors has called for the material to be retrieved and analyzed.

"The question I have," Pegors said, "is why they went to such extremes for non-contaminant material."

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
1135 U. S. Post Office and Custom House  
St. Paul, Minnesota 55101

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The Pioneer, Bemidji, Minnesota

Tuesday, November 2, 1976

## A BARREL IN HAND

One of those barrels has to come up.

The barrels, of course, are those that supposedly contain some 800,000 pounds of military waste, dumped into Lake Superior between 1959 and 1962 by the US Army Corps of Engineers, on behalf of Honeywell, Inc., of Minneapolis.

The barrels--1,400 of them--lie in 100 to 300 feet of water about one mile out into the lake from Duluth. Some of these barrels became entangled in the nets of commercial fishermen in 1963, but the presence of the barrels in the lake didn't come to public light until this past summer.

In August, the Army Corps and Honeywell explained that the barrels contained harmless scrap metal left over from munitions testing. The scraps were said to be nonradioactive, nonexplosive, and nonchemical.

These assurances, however, have not been sufficient to remove the concern of Dr. Donald Mount, director of the National Environmental Research Laboratory (formerly called the National Water Quality Laboratory) in Duluth. In a letter to Peter Gove, executive director of the Minnesota Pollution Control Agency, Dr. Mount said he is suspicious about the Honeywell waste because of changes in the spawning habit and other behavior patterns of his laboratory animals.

To ascertain beyond doubt what those barrels contain, Dr. Mount has suggested that his lab and the PCA "lift one or more of them out and do some analytical work to find out what was in them so that we have a better idea of what to expect should one break."

The Army Corps and Honeywell can continue to give us assurances that those barrels contain only harmless metal scraps. But to paraphrase the wisdom about a bird in the bush a barrel in hand might be worth two in the lake.

The pot of public speculation can boil on forever, and without definite, firsthand examination of the contents of some of the barrels, everytime we get an outbreak of flu around here, 10 people in a room sneeze, it will be guessed that whatever illness has befallen this community has come from those mysterious, sunken barrels.

Why not raise one or two and settle the matter? Considering that Honeywell has had no rent of the lake bottom for almost 20 years as a dump site, certainly it wouldn't be unfair to ask Honeywell to pay the costs of raising those one or two barrels.

DULUTH NEWS-TRIBUNE, Editorial/Opinion

JOHN M. McMILLION, Publisher

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ARCHIE C. SALYARDS  
Editorial Page Editor

ROBERT A. KNAUS  
Managing Editor

## **SUPERIOR DRUMS CONTAIN REMAINS OF SMALL BOMB**

**By DON BOXMEYER**  
**Staff Writer**

Those celebrated barrels on the bottom of Lake Superior contain the remains of a weapon known to the US Army as a "bomblet."

A bomblet, according to the sworn testimony of a retired ordnance officer, is a small bomb.

Filled with small shot or ball bearings, the weapon was a "cluster bomb unit" designed for antipersonnel and antimaterial use.

The testimony is contained in the three-page affidavit of Milton M. Rothman, who served more than 20 years in the Army Ordnance Corps before his retirement in 1966.

THE TESTIMONY was released by the US Army Corps of Engineers in an apparent effort to satisfy public curiosity over the contents of 1,400 drums dumped into Lake Superior near Duluth between 1959 and 1962.

There had been speculation from as far away as Michigan that the drums contained radioactive, toxic or explosive material, and the corps, which carried out the dumping program under contract, has said it would fetch a barrel or two from the lake bottom if it had to in order to end the controversy.

It appears now that none of the barrels will be surfaced this winter because the US Environmental Protection Agency's (EPA) water quality lab at Duluth is satisfied the drums are not contaminating the water.

ANALYSIS OF WATER samples taken from the vicinity of the drums earlier this month shows the water is no different in quality from samples taken in another part of the lake.

While it does not now contemplate fishing a drum or two out of the lake, the corps said it will continue to search for records showing the precise nature of the ordnance waste.

Rothman, meanwhile, described the operation--now declassified--that produced the mysterious waste.

"Production of the bomblets involved the use of steel," he recalled, and the steel bomblets were filled with little steel balls. Any balls left over were taken out on a gunnery range and destroyed with explosives to render them shapeless, he said in his affidavit.

THEY THEN WERE PACKED in drums, sealed with concrete, taken to Duluth under close security and dumped by the corps into the lake in an apparent effort to elude foreign agents who might like to know what the contents of a bomblet looked like.

At no point in the operation were there any precautions taken by any personnel against radioactive contamination, Rothman said. After completion of the dumping project, he had lunch at the Duluth Air National Guard base and returned to his duty station at the Twin Cities Arsenal for debriefing.

For his part in the bomblet mission, Rothman indicated, he was awarded an oak leaf cluster for his Army Commendation Medal.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
1135 U. S. Post Office and Custom House  
St. Paul, Minnesota 55101

TRUCKER DOUBTS CARGO RADIOACTIVE

By DON BOXMEYER  
Staff Writer

The recollections of a veteran truck driver may help clear up the mystery surrounding 800,000 pounds of military waste dumped in Lake Superior between 1959 and 1962.

Don Cahow, of 4822 104th Ave., NE, Blaine, said Wednesday he doesn't agree with speculation that the material, contained in 55-gallon steel drums, might be radioactive.

"From the way the drums were handled and from the way we hauled it," Cahow said, "It just couldn't have been radioactive."

The state of Michigan and an environmental group, the Northern Environmental Council (NOREC), want state and federal agencies to completely investigate recently published suggestions that some of the 1,400 drums contained radioactive waste from a nuclear power plant.

The drums were dumped in 100 to 300 feet of water near Duluth by the US Army Corps of Engineers under contract to Honeywell, Inc. Both the corps and Honeywell have maintained that the drums contained then-classified scrap metal left over from testing ordnance at the Twin Cities Arms Plant at Arden Hills.

Cahow, a 25-year employee of Briggs Transportation Co., said he was told the drums contained metal "stampings," and were topped off with a layer of concrete to seal the load.

"The drivers didn't touch the drums," he said. "They (Honeywell employees) loaded our trailers with forklifts. I could tell the drums were very heavy, though."

Cahow said he made "quite a few" runs from the Twin Cities to Duluth during that period and usually in convoys of three and four trucks.

The drums would be offloaded at Duluth, placed on a corps barge and taken about a mile offshore for dumping.

Cahow said he could not recall seeing any military guards at either end of the line, but the trips and dumping operations were always observed by one or two men in civilian clothing he thought were Honeywell people.

He said no precautions, such as wearing protective clothing or monitoring the loads for radioactivity, were ever taken, leading him now to believe the drums did not contain anything hazardous.



"Besides," he added, "we are required by the Interstate Commerce Commission (ICC) to signify radioactive loads with placards front, back and sides. We never used any placards on those loads."

Cahow said he continued to haul the Honeywell drums to Duluth after the intake dumping was stopped in 1962 because it was "an easy run and good money."

After 1962, the drums were taken to the US Steel Plant at Duluth and melted down.

It has been suggested that the drum caches be located and a representative sample of drums hauled to the surface to be analyzed to conclusively determine if they are radioactive.

But, Minnesota Pollution Control Agency (PCA), Director Peter Gove, said this week there does not appear to be any solid evidence that the drums contain radioactive material. He said he cannot at the present time recommend spending money to retrieve any of the drums.

ST. PAUL PIONEER PRESS, St. Paul, Minnesota

Thursday, November 11, 1976  
LOCAL AND REGIONAL

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
1135 U. S. Post Office and Custom House  
St. Paul, Minnesota 55101

ARMY'S DUMP IN SUPERIOR PROBED

By The Associated Press

Michigan officials, acting on the unsubstantiated story of a retired tug-boat skipper, want the Federal Government to find out exactly what was contained in more than 1,400 sealed barrels the Army dumped secretly into Lake Superior 14 years ago.

Although they have no hard evidence, state officials are following up a rumor that the barrels, in 100 to 300 feet of water near the Duluth shoreline, might contain radioactive waste materials.

The Army Corps of Engineers said Monday, the barrels hold classified, non-radioactive scrap metal, produced during the manufacture of secret weapons used in Viet Nam. The corps admits there were 1,437 containers dumped between 1959 and 1962.

The dumping was brought to state attention by Marilyn Burton of Sault Ste. Marie, who asked Department of Natural Resources Director Howard Tanner during a Marquette meeting if he had heard a story that the Army dumped radioactive material into Lake Superior.

Danford E. Anderson, now in his early 70s and retired in the Soo, was the skipper of a Duluth-based tug on May 24, 1961. Army records show a secret shipment of 180 barrels was delivered to Anderson for dumping.

Anderson's wife, Gertrude, was at the dock with her husband. She said they were told by "someone" that the barrels "contained stuff from the atomic plant on the St. Paul River."

Minnesota pollution control officials said there were no nuclear facilities in the state at that time. They added they have checked out Anderson's story and have all but dismissed it.

The Andersons have been telling friends about the strange night-time operation for years, but it was only when Mrs. Burton brought it up to Tanner that the state got wind of it.

Preliminary DNR investigation turned up another witness to the dumpings, 50-year-old Leonard Yeo of Laurium in the Upper Peninsula.

Yeo said he remembered participating in the dumping operation and being disturbed by its secrecy.

Michigan officials say they will press their investigation, and may demand the Federal Government dredge up one or more of the sunken barrels so the contents can be examined and analyzed.

Col. Forrest Gay, head of the Engineers Office in St. Paul, Minn., said the Pentagon told him it would not object to that, since the scrap metal has been declassified. But, he added, there is no money in his budget to salvage the barrels.

WORTHINGTON DAILY GLOBE

2 NOVEMBER 1976

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
1135 U. S. Post Office and Custom House  
St. Paul, Minnesota 55101

SECRET DUMPING RAISES QUESTIONS

Ridder News Service

DULUTH - Minnesota and Michigan officials, acting on the unsubstantiated story of a retired tugboat skipper, want the Federal Government to find out exactly what was contained in more than 1,400 sealed barrels the Army secretly dumped into Lake Superior 14 years ago.

Although state officials have no hard evidence, they are following up a rumor that the barrels, in 100 to 300 feet of water near the Duluth shoreline, might contain radioactive waste materials.

DURING the winter of 1968, a fisherman picked up six barrels, believed to be some of the waste containers, about a mile offshore from the Duluth water pumping station.

Both Honeywell Inc., Minneapolis, the manufacturer of the dumped material, and the US Army Corps of Engineers who supervised the dumping of the material, say it is scrap metal, nontoxic, noncontaminating and nonradioactive.

But, Honeywell and the corps admitted their records only go so far in identifying the dumped material.

James Braatz, speaking for the corps, said the orders to dump came from Washington, D.C.

He said the shipment of material arrived with Army Military Police in charge and already packed in concrete. The barrels were taken out of the corps' barges to be dumped in the lake.

BRAATZ SAID that the US Army has told the corps that the material is shell fragments. The process of casting the shell so that it would explode into uniform particles was secret; therefore, the scrap from the manufacturing process was classified, he said.

In 1968, a fisherman, Stanley Sivertson, of Duluth, picked up several of the barrels while trawling in about 25 fathoms (150 feet) of water.

Sivertson said he dumped all the barrels back into the water. One of his crew men, however, had looked inside a barrel and had said the contents looked like buckshot or bits of metal which had been melted and mixed with concrete.

The dumping was brought to the attention of Michigan officials by Marilyn Burton of Sault Ste. Marie, who asked Michigan Natural Resources Director Howard Tanner during a Marquette, Mich., meeting whether he had heard the Army dumped the radioactive material.

DANFORD E. Anderson, now in his early 70s and retired, was skipper of a Duluth-based tug on May 24, 1961. Army records show that a secret shipment of 180 barrels were delivered to Anderson for dumping.

Anderson's wife, Gertrude, was at the dock with her husband. She said recently they were told by "someone" that the barrels "contained stuff from the atomic plant on the St. Paul River."

Minnesota Pollution Control Agency officials said there were no nuclear facilities in the state at that time. They added they have checked out Anderson's story and have all but dismissed it.

But, John Pegors, regional PCA Director, said he wants the Corps to retrieve some of the barrels and check their contents.

BRAATZ said the material was put into containers of wood, paper, and metal. Concrete was added for ballast.

"That would indicate the material was not radioactive--that it was packed in wood and paper," Braatz said.

But, James Pruchan, environment specialist for the Michigan DNR said that radiation from Alpha-emitting waste such as plutonium, would be stopped by wood, paper or concrete.

He added that putting radioactive waste materials into concrete and dumping them into water was a common method of disposal in the early 1960s.

THE DISPATCH, St. Paul, Minnesota

Friday, November 5, 1976

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES  
STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926  
HOWARD A. TANNER, Director

December 22, 1976

Mr. James L. Liverman  
Assistant Administrator for  
Environment and Safety  
U.S. Energy Research and  
Development Administration  
Washington, D. C. 20545

Dear Mr. Liverman:

Thank you for your letter of December 7, 1976, explaining the results to date of your investigation concerning the contents of the barrels which were dumped into Lake Superior by the Army Corps of Engineers. I realize that your agency has spent considerable time and effort in reviewing your records concerning nuclear waste material which could be contained in the barrels; and that the EPA and Corps of Engineers have conducted water sampling which showed no radioactivity or elevated water quality parameters in the vicinity of the 20 barrels that were located.

However, it is still our position that to provide a completely satisfactory answer to the public, representative barrels must be removed from each of the dump locations and be opened for analysis. I realize that your agency is only peripherally involved; however, our position is that the Federal Government dumped the barrels in the waters of the Great Lakes without the states' knowledge or approval, and we feel it is their responsibility to assure the citizens of these states that the barrels do in fact contain inert materials.

By copy of this letter, I am notifying Governor Milliken, Congressman Ruppe, the Corps of Engineers, and other states which border on Lake Superior that our position has remained unchanged and urge them to support efforts to obtain conclusive information on the contents of these barrels.

Sincerely,

Howard A. Tanner  
Director

cc: Governor Milliken, Cong. Ruppe, Gen. Moore,  
Mr. Alexander, Mr. Gove, Mr. Gebken

Dan Rau  
117 N. 2nd Ave., E.  
Duluth, Minnesota  
55805

2nd August, 1976

Col. Max W. Noah  
1135 U.S. Post Office and Customs House  
St. Paul, Minnesota 55101

Dear Colonel Noah:

I have been trying to determine the contents and origin of some 55 gallon drums which were dumped into Lake Superior near Duluth and some of which were subsequently caught in 1968 by a fishing boat in a trawl net, brought to the surface, and dumped again in shallower water. I have talked to the person who handled those drums. He described them as weighing about 700-800 lbs., having sand in them, and being nearly rusted through in places. He said there were no marks evident on the barrels, except numbers which meant nothing to him. On two separate occasions, this boat picked up drums of this description, once two drums, and the second time four drums, both times about 1 1/2 miles east (up current) of the intake for the Duluth City water pumping system, which is about two miles northeast of the Lester River.

I have talked twice to Court Mueller of your Duluth office, and he has given me a (barely legible) copy of a letter to Rep. Phillip K. Kappe dated 12th June, 1975, signed by you, and said that he has no more information on any drum dumping, except possibly the tug logs. Knife River, where the drums described in that letter were supposedly dumped is 12 miles east of where the above drums were recovered, and the recovered drums were picked up in about 25 fathoms (150 feet) whereas the drums in your letter were supposedly dropped into 350 feet of water.

I am not satisfied that the drums described in your letter are the ones which were picked up in the trawl of the HIAWATHA in the winter of 1968. Since you obviously have some records of dumping which are apparently not available in Duluth, would you please go through those records to see if there were any other, possibly earlier, dumping closer to the pumping station which might reasonably account for the drums recovered by the HIAWATHA. Needless to say, any harmful material in that area would have a high chance of being taken in by the Duluth City water intake because of the prevailing current northeast to southwest along the North Shore.

With many thanks for your attention. Sincerely,

Dan Rau

NCSA

Inquiry Regarding Disposal of Waste  
Material in Lake Superior by Corps

Memo for Record

Chief, Public Affairs Office 10 Nov 76

1. Public Affairs Office received a telephone call in the morning of 2 November from Kirk Schaffitz, a reporter for the Detroit Free Press. Schaffitz wanted information on steel drums dumped in Lake Superior between 1959 and 1961 by the Corps and which rumor alleged contained nuclear material or radioactive wastes. His basic question was whether the Corps would consider raising one or more of the barrels so that the contents could be analyzed. The call was transferred to District Engineer who told Schaffitz that material dumped -- produced by Minneapolis Honeywell Regulator Company for Chicago Ordnance District -- was several hundred containers, mostly 55-gallon drums, which contained classified metal scrap shown on Corps records to be non-toxic, non-radioactive, and non-explosive. DE said he would check further on exact number of containers dumped, how many dumps, and locations. Schaffitz said that the story had resulted from statements of Mrs. Joseph R. Burton at a meeting of Michigan DNR. Mrs. Burton, Schaffitz said, declared at the meeting that the wife of a former Corps tugboat captain, Danford Anderson, told her that her husband in 1961 had participated in a dump in Lake Superior of steel drums that were said to contain radioactive wastes from the Twin Cities. Schaffitz further stated that a letter from Michigan DNR Commissioner Howard Tanner to the U.S. Energy Research Development Administration (USERDA) requested a Federal investigation. DE phoned Col. James Miller in Office of Ass't Sec Army Victor Vessey and was told Corps had no authority to exhume barrels.

2. DE received telephone call 2 November from Jonathan Kane, Special Assistant to Michigan Governor Milliken, asking for information on alleged dumping of materials. DE responded with information from District records, assuring Kane that the dumped material was innocuous. The exchange discussed the possibility of retrieving some of the containers to have them examined. DE pointed out that he had no authority or money to conduct such an operation.

3. DE called reporter Schaffitz back on afternoon of 2 Nov and informed him that about 1400 containers had been dumped in six operations at two locations -- mouth of Lester River, at about 100-foot depth, and mouth of Knife River, about 300-foot depth. DE again reiterated that material was not radioactive or toxic, and we could not initiate recovery and examination.

4. PA Office on 2 Nov contacted Mrs. Gertrude Anderson, wife of Danford, at her home in Sault Ste. Marie. We were informed by her that her husband had suffered a stroke in recent years, and she must talk for him. She stated that while she had never made any statement that the Corps had dumped radioactive waste in Lake Superior during her husband's period of employment, that at the time of one of the dumps, in 1960, she had witnessed the loading of the barrels on her husband's vessel, and that it



Memo for Record  
NCSPA

10 Nov 76

was rumored then that the containers "must have contained radioactive wastes because of the heavy military escort that accompanied them." Mrs. Anderson also made reference to "radioactive stories" in local newspaper.

5. PAO called E. J. Sundstrom, reporter for Sault Ste. Marie Evening News, and asked him about stories referred to by Mrs. Anderson. Sundstrom told us that Mrs. Anderson had attempted to get him to run such a story 3 years previous; but after talking to her, he gave it little credence and did not follow through because he considered her unreliable.

6. Also on 2 Nov, DE spoke by phone with Mrs. Burton, discussing dumping and allegations of radioactive wastes, informing her that Corps records and circumstances clearly proved that dumped material was harmless.

7. 3 Nov, PAO received call from Steve Gadler, member Citizen's Committee of Minnesota Pollution Control Agency, asking details of barrel dumping. He stated dumping was bad judgment even if barrels did not contain radioactive waste. Queries were also received from WCCO-TV which sent camera crew and reporter to interview DDE in the afternoon. Treatment in local news hour was balanced and indicated strong unlikelihood that materials dumped 15 years before were in any way dangerous.

8. Emergency Operations Office received telephone query from official of USERDA asking for background on dumping. He was briefed on the background of the story and seemed satisfied.

9. Queries from media, State officials, and citizens continue to be received by Office of DE and PAO once or twice daily.

JAMES E. BRAATZ  
Chief, Public Affairs Office

STATE OF WISCONSIN / DEPARTMENT OF NATURAL RESOURCES

Anthony S. Earl  
Secretary

January 18, 1977

Box 450  
MADISON, WISCONSIN 53701

IN REPLY REFER TO: 1600

Colonel Forrest T. Gay, III, District Engineer  
St. Paul District, Corps of Engineers  
1135 U.S. Post Office and Custom House  
St. Paul, Minnesota 55101

Dear Colonel Gay:

On December 14, 1976, representatives of the Department of Natural Resources met with officials from the Corps of Engineers, Environmental Protection Agency and the Minnesota Pollution Control Agency to discuss the most recent findings concerning the contents of 1,437 fifty-five gallon barrels of scrap metal that were dumped by the Corps of Engineers in the Minnesota waters of Lake Superior near Duluth. Although investigations to date indicate that the contents of these barrels have not significantly affected water quality in Lake Superior, there appears to be some doubt on the exact content of all the barrels.

Consequently, I would urge you to continue your investigations until conclusive information is obtained on the contents of the barrels. It is the Department's position that the Corps should secure the Honeywell defense contract in addition to recovering a representative sample of the barrels for inspection of the contents. This information should then be made available to the public.

Thank you for your efforts in resolving this sensitive matter.

Sincerely,

Anthony S. Earl  
Secretary

cc: Executive Director - Minnesota Pollution Control Agency  
Howard Tanner - Michigan DNR  
Dr. Donald Mount - EPA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL RESEARCH LABORATORY - DULUTH  
6201 CONGDON BOULEVARD  
DULUTH, MINNESOTA 55804

November 11, 1976

Mr. Peter Gove, Executive Director  
Minnesota Pollution Control Agency  
1935 West County Road B2  
Roseville, Minnesota 55113

Dear Mr. Gove:

During the past few weeks, there have been articles in the local news media regarding waste material from Honeywell Corporation which the Army had dumped in Lake Superior some years ago. Coincidentally, with this publicity, we have noticed again a change in the water characteristics coming into our lake water intake at the laboratory, such that some of our animals have stopped spawning and other behavioral abnormalities seem to have cropped up. We have noted instances of this nature from time to time in past years, as well. Naturally, I couldn't help but wonder if there is any connection between these two since it has been some time since the drums have been put into the lake, and undoubtedly some of them may have rusted through by this time.

Furthermore, as you are well aware I am sure, the content of some of the organic hydrocarbons in the lake are higher than common sense would seem to suggest they ought to be and this, too, has made me suspicious about some identified source of materials other than fall-out and rain-out from air transport.

The purpose of my memorandum is to suggest that we attempt to learn more about what was in those barrels and if need be, that we lift one or more of them out and do some analytical work to find out what is in them so that we have a better idea of what to expect should one break.

I have talked to an individual who assisted with the dumping operation and information from that person indicates that there was perhaps a hundred tons of the material dumped in the lake. Judging from the security which surrounded the dump, it seems reasonable to suspect that it was pretty bad stuff that was contained in the drums. For our own interests, we would like to look into this further and solicit your help in doing so.

Very truly yours,

Donald I. Mount, Ph.D.  
Director

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U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON  
MERCHANT MARINE AND FISHERIES  
Room 1334, Longworth House Office Building  
Washington, D.C. 20515

November 5, 1976

Colonel Forrest T. Gay III  
District Engineer, St. Paul  
U.S. Army Corps of Engineers  
1210 U.S. Post Office and  
Custom House  
St. Paul, Minnesota 55101

Dear Colonel Gay:

A situation has just been brought to my attention that appears to represent an incredible lack of good judgment on the part of the Corps, especially since it is the Corps that has primary responsibility for the administration and enforcement of the Refuse Act of 1899. I refer to the reported and acknowledged dumping by the Corps of some 1,437 containers of waste material into Lake Superior in the vicinity of the Knife River between the years 1959 and 1962.

I understand that the State of Michigan has asked for a probe of this affair which was reported to have been conducted in a rather clandestine manner.

Duluth area residents, whose water intakes lie in the vicinity of the Lester River, and, indeed, all residents in the Lake Superior basin are deserving of a full disclosure, of proof that nothing inimical to their health or welfare was or is present, and of a recovery and alternate disposal effort if adequate assurances are not forthcoming.

May I please have the benefit of your advice.

Sincerely,

Philip E. Ruppe  
Ranking Minority Member

PER/jbw

cc: Brig. Gen. Robert L. Moore  
North Central Division Engineer

# DISPOSITION FORM

SECURITY CLASS. (U/eng)

FILE NO.

SUBJECT

TO AOIC  
TCAIO

FROM John G. Heren, RIO  
Mpls-Honeywell Reg. Co.  
Twin Cities Arsenal Bldg. 502  
New Brighton, Minn.

DATE 25 August 1959 COMMENT NO. 1

J. Heren/es

1. The following list of facilities and special processes to be utilized by Minneapolis-Honeywell Regulator Co. at Twin Cities Arsenal Building 502 on Contract DA-11-022-ORD-3019 facilities Contract DA-11-022-ORD-2695.

(a) Chemical Analytical Laboratory.

This laboratory will be utilized to ascertain that materials manufactured here or purchased outside comply with the applicable specifications per the Ordnance Drawing or Engineering Parts List. This laboratory will perform the control function on chemical processes utilized at this plant.

(b) Meter Direct Reading Spectograph.

This special test machine is used to analyze metal alloys manufactured at this plant to ascertain that they meet specifications per Ordnance Drawing or Engineering Parts list. The information derived by analysis on metal slugs serves as a control for their casting operations.

(c) Phillips X-Ray Diffraction and Fluorescence.

Utilized in analysis of material as to structure and composition. This analysis is used as a basis of certification of material produced.

(d) Radiographic X-Ray (100KV-10MA)

This equipment will be used to check weldments and castings in case of doubtful material as to porosity or inclusions. Minneapolis-Honeywell Regulator Co. are also contemplating attempting to evaluate visual standards for these type of defects.

(e) Aluminum Alloy Heat Treatment Ovens.

This equipment is to be used by Minneapolis-Honeywell Reg. Co. for the treatment of items produced on Contract DA-11-022-ORD-3019

(f) Metal Finish (Zinc Plate; Chemical Films for Aluminum Alloys; Dichromate; Chemical Cleaning of Materials.)

2. All the above equipment is to be utilized by Minneapolis-Honeywell Reg. Co. to supply certification as required by PA-PDs-1112; 669; but also as required by specifications as noted on Ordnance Drawings and Engineering Parts lists for Contract DA-11-022-ORD-3019. This memo is to acquaint all concerned with new equipment being used and to ascertain if any approvals or certifications of processes will be required. This equipment is all located at Twin Cities Arsenal; Building 502; New Brighton, Minnesota and is not equipment found at other Minneapolis-Honeywell Regulator Co. facilities.

C1

*John G. Heren*

DD FORM 96  
1 FEB 50

REPLACES NME FORM 96, 1 OCT 48, WHICH MAY BE USED

U. S. GOVERNMENT PRINTING OFFICE: 1953 O - 986775

# SWORN STATEMENT

For use of this form, see AR 190-30; the proponent agency is Office of The Provost Marshal General.

LOCATION Honeywell Inc.	DATE 3/7/77	TIME 2:00 pm	FILE NUMBER --
LAST NAME, FIRST NAME, MIDDLE NAME Ruby, Allan LeRoy	SOCIAL SECURITY NUMBER. 472-18-7521		GRADE/STATUS --
ORGANIZATION OR ADDRESS Honeywell Inc., Avionics Div., 1625 Zarthan Ave, St. Louis Park, MN			

WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH

During the 1959 thru 1961 time frame, considerable scrap material of a classified nature was accumulated by Honeywell at Building 502 at the Twin City Arsenal. Some small quantity was from the Hopkins facility, the majority being metals from product produced at Building 502. This was security classified material awaiting disposition authorizing instructions from the Chicago Ordnance District. Far and away the majority of scrap was steel and aluminum mixed into concrete. The material was scrap from hemisphere manufacture of a configuration similar to the photograph shown me by Captain Hager during our discussions on 2/25/77. I can recall two and possibly three occurrences in which I was involved in witnessing the disposition of classified scrap. I know that some and very possibly all of this material was supplied to the Corps of Engineers for disposition within Lake Superior. The preparation by putting material into fifty-five gallon drums did not correspond to the final submersion dates as a number of filled drums were stored at Building 502 and only part of them were placed on trucks at a time.

The material placed in the drums was all non-toxic and handled without requirements for any special cautions or special safety instructions. Material involved was:

- . Ceramic
- . Magnesium
- . Brass
- . Concrete
- . Steel
- . Aluminum
- . Impregnated Paper/Fiber-glass Tape

Due to the lapsed time and absence of records, the foregoing statements are my best recall at this point in time.

THIS PAGE IS BEST QUALITY PRACTICABLE  
FROM COPY FURNISHED TO DDC

EXHIBIT C-2	INITIALS OF PERSON MAKING STATEMENT [Signature]	PAGE 1 OF 1 PAGES
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ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF \_\_\_ TAKEN AT \_\_\_ DATED \_\_\_ CONTINUED" THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT AND BE INITIALED AS "PAGE \_\_\_ OF \_\_\_ PAGES." WHEN ADDITIONAL PAGES ARE UTILIZED, THE BACK OF PAGE 1 WILL BE LINED OUT, AND THE STATEMENT WILL BE CONCLUDED ON THE REVERSE SIDE OF ANOTHER COPY OF THIS FORM.

DA FORM 2323

SUPERSEDES DA FORM 2023, 1 JAN 68, WHICH WILL BE USED.

PAGE OF PAGES

STATEMENT OF PERSON MAKING STATEMENT

(Authority To Administer Oaths)

ORGANIZATION OR ADDRESS

(Typed Name of Person Administering Oath)

(Signature of Person Administering Oath)

ORGANIZATION OR ADDRESS

Subscribed and sworn to before me, a person authorized by law  
to administer oaths, this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_

(Signature of Person Making Statement)

WITNESSES:

NEVER WHICH BEGINS ON PAGE 1 AND ENDS ON PAGE 1. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT  
MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE  
CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT  
OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

HAVE READ OR HAVE HAD READ TO ME THIS STATE-

AFFIDAVIT

STATEMENT (Continued)

AFFIDAVIT OF MILTON M. ROTHMAN

I, MILTON M. ROTHMAN, being first duly sworn on oath, deposes and says:

I served in the United States Army from March 1943 until my retirement in November 1966. I was commissioned as an officer in June 1945. I served as an officer in the Army Ordnance Corps from December 1945 to November 1966.

From August 1962 to January 1964, I served as a contracting officer's representative at the Twin Cities Army Ammunition Plant, New Brighton, Minnesota. My office was located at the plant. This office was a subsidiary of the Chicago Ordnance District, Chicago, Illinois.

My duty as a contracting officer's representative was to insure that Honeywell Incorporated complied with the terms and conditions of its contracts with the United States. I administered other contracts with Honeywell and with other contractors. I was responsible for insuring that the material used in the manufacturing met the contract specifications, that the products met the statistical quality control standards and on a limited basis I negotiated with the contractors and approved changes within the contracts.

Two of the Honeywell contracts, I administered, were for the production of small bomblets, one anti-personnel and one anti-materiel. These bomblets were known as cluster bomb units. The contract was classified as confidential. It was not classified as top secret. The project was classified because the bomblets were new and the configuration and manufacturing techniques were new.

During my term at Twin Cities Army Ammunition Plant, I was in the plant on the production line, on a daily basis. I had to wear safety glasses while I was in the plant. At no time did I ever see anything that would indicate there was any radioactive material in the plant.

The production of the bomblets involved the use of steel. One of the bomblets had steel ball bearings in the bomb casing itself. I know of no special treatments involved. I know of no radioactive material in the two Honeywell buildings. I did not see a radiacmeter or geiger counter or any other radioactive measuring device and I did not have to wear a monitoring badge.

The production of the cluster bomb units resulted in disposable steel scrap. Upon my arrival in August of 1962, there was scrap accumulated. It was disposed of in September 1962. The scrap was transported to Camp McCoy and destroyed on a range with C-4 explosive. We then examined the scrap to see that no particles of identifiable size remained.

In the later part of September or in early October 1962, a load of fifty-five gallon drums, filled with the steel scrap were taken to the Corps of Engineers dock in Duluth and loaded on a boat. I understood these drums were to be dumped in Lake Superior.



The scrap was transported by Honeywell in trucks to Camp McCoy, Duluth, and Camp Ripley. The trucks at all times were under guard by Honeywell. In late October 1962, or early November, another load of scrap was taken to Camp Ripley and destroyed. I accompanied this load and witnessed the destruction.

The scrap which went to Lake Superior, was loaded in the fifty-five gallon drums until the drums were about three fourths full. The top one fourth was filled with concrete. The drums were three and one half to four feet tall. Each drum was then sealed with a cap. From the production line accumulation, the scrap went directly into the drums. The drums were setting at designated places on the production line. At no time during the handling or transporting of the scrap did I see anyone wearing special protective clothing or equipment. I never had to wear special clothing or equipment.

The scrap taken to Duluth was loaded on the trucks, under guard, and was accompanied by me and Major Dean in a car. We had a car in front and behind the truck with guards, so there is no chance that any other material could have been placed in the truck. There was nothing unusual about the trip. We had about fifty barrels in one truck. The convoy took the scrap straight to the dock in Duluth. The barrels were placed on the boat's deck so they could be pushed or rolled into the lake. The boat personnel had no special clothing. The boat had no special equipment on it.

The trip took place in the morning. I ate lunch at the Air National Guard Base in Duluth, after the delivery.

This was the only scrap shipment to Duluth that I ever witnessed. I would have known about any and all shipments to Duluth, during my tour of duty.

When I arrived at Twin Cities Arsenal, I received a security briefing and when I left, I was debriefed. I was given no warnings, nor was I cautioned about special handling procedures or health hazards.

I was honorably retired from the US Army in November 1966. I was given an oak leaf cluster for my Army Commendation Medal.

Further affiant sayeth not.

S/  
MILTON M. ROTIMAN

Subscribed and sworn to before me this 10<sup>th</sup>  
day of December, 1976.

S/  
Notary Public \_\_\_\_\_ County, Minnesota

My Commission expires October 20, 1981.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ENVIRONMENTAL RESEARCH LABORATORY - DULUTH  
6201 CONGDON BOULEVARD  
DULUTH, Minnesota 55804

C O P Y

Summary of Water Analyses  
Pertinent to the Barrels in Lake Superior

Samples of water were taken near the bottom among the barrels and at a point some 100 or more feet "upstream" from the barrels. At the time of sampling on December 4, 1976, the current velocity was about 0.1 FPS. The current direction was such that we expect water discharged from the harbor to have been moving through the area being sampled.

Rigid precautions were taken to avoid contamination of the samples by containers and sampling equipment. A minute quantity of oil from the new winch cable used to lower the sampler, was noted on the lake surface. Precautions were taken to avoid contamination from this source.

The plan of data evaluation was to compare the concentration of metals, organics, and radioactivity in the samples collected from among the barrels to the concentrations in water samples taken upstream. Any higher concentration in water from among the barrels would suggest contamination from the barrels or their contents.

An analysis for eleven metals revealed no detectable differences between the two groups of three samples each. All concentrations were within the range of values observed in the western tip of Lake Superior.

A GC-MS analyses for a variety of organic chemicals again revealed no detectable differences. The PCB concentration in both sample locations

MORE...

was few trillion higher than open lake values. These elevated values may have been the result of 1) oil contaminants from the cable, 2) a small amount of sediment in the samples or 3) increased amounts from harbor water.

Checks for beta and gamma emitting radionuclides showed no difference between sampling points. The analytical methods used did not include a major sample concentration step so detection limits could be lowered to some extent. The methods used are considered adequate for purposes of these analyses.

ERL-D concludes that water quality around the barrels is good. We find no detectable contributions from them by the elements and chemicals we are able to measure routinely. No information has been found to confirm or deny that the barrels contain steel, aluminum, and zinc, and any solution that might be taking place is not detectable by our methods even though the methods we employed have significantly greater sensitivity than those normally used in routine laboratories.

MEMORANDUM  
FOR ALL INTERNAL COMPANY CORRESPONDENCE

HONEYWELL COPY 29 of \_\_\_\_\_

DATE: December 14, 1959

COPIES TO: J. Barrett - 833

\*W. Wichelmann - 831

TO: \*G. W. Lillicrop - 835

C. Ciasen - 840

C. Snowberg - 810

F. Miller - 816

P. Robinson - 831

R. Anderson - 816

S. Patrilla - 831

FROM: L. J. Quale - 847

J. Frakes - 816

\*L. Rogers - D.C.

J. Tucci - 816

D. MacLennon - M.J.

SUBJECT: SUPPLEMENTARY RELEASE (NO. 2)  
CONTRACT ORD-3019

\*L. Polley - 816

G. Neale - 847

\*A. Ruby - 890

\*R. Quale - 847

W. Mannik - 890

J. Baren - 890

SPECIAL HANDLING REQUIRED  
NOT RELEASABLE TO FOREIGN NATIONALS  
EXCEPT

\*E. Gotthilf - 834

\*Ord Files - 847

\*D. Schramm - 890

AUTHORITY OF \_\_\_\_\_ DATE \_\_\_\_\_

\*M. Paschke - 890

\*Received copies of the contract

REFERENCE: Original release of May 27, Serial 20005  
Copy No 1 July 28, Serial 20023

You are authorized to proceed with the fabrication of the following:

I Delete Item 1 in my release of July 28 and substitute the following:

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
1	Head, HE, 762MM Rocket M6, MPTS, including loading of Fuzes, Less: Detonator, M55; Detonator Lead Cup; Fuze, Rocket, Mechanical Timer, M411 and Crate Packing.	670	Each	\$3,234.94	\$5,517,409.80

<u>SUB ITEM</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
(a)	Head, HE, 762MM Rocket M6, MPTS	670	1	\$1,630.33	\$1,092,321.10
(b)	Fuze, Grenade M212	2,072,980	3,094	4,069.88	2,726,819.60
(c)	Top Section Assembly for Grenade M32, ORD. No. 8798403	2,072,980	3,094	1,150.47	770,814.90
(d)	Base Section Assembly for Grenade M32 ORD. No. 8798404	2,072,980	3,094	1,150.47	770,814.90

DECLASSIFIED OCT 74 PER AUTHORITY MSG  
AMSAR-SS 291507Z Oct 74 SUBJ: AMCR 380-3  
SECURITY ICM.

# DISPOSITION FORM

For use of this form, see AR 340-13, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL

SUBJECT

DRCPM-SA-LS-RI

M40 and M32 Grenades

TO DRSAR-ISC

FROM DRCPM-SA-LS-RI

DATE 14 April 1977 CMT 1

CPT Hager

Mr. Britt/jh/6841/6572

1. Reference is made to Lake Superior disposal.
2. The only difference between the two subject grenades was the diameter. When assembled, the metal and make-up of the grenades were the same.



MARVIN G. BRITT

Industrial Program Specialist  
DRCPM-SA-LS-RI

C-9

NO. 1, APR 94 1181

PHYSICAL PROPERTIES		DO NOT DO	APPLY PART NO. AS SPECIFIED	REVISIONS			
YP		APPLICATION		SYM	DESCRIPTION	DATE	APPROVAL
TS				A	EO-OAC-SP-102	2-26-58	112 0436
EL2		NEXT ASSY	USED ON	B	EOPA 9131	12-1-61	113 0437
RA							
BH							
RH							

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FROM COPY FURNISHED TO DDC

**.095  $\pm$  .005 SPHERICAL DIA**

- 1 - SPEC MIL-A-2550 APPLIES.
- (B) 2 - MATERIAL:- WIRE, STEEL, STEEL NO. 1010, 1015 OR 1020, FINISH NO. 1, TEMPER HARD, PRACTICE A OR B, SPEC QQ-W-461 (NOTE 4), OR WIRE, STEEL, GROUP II, STEEL NO. 1013, FINISH I, TYPE 3, SPEC QQ-W-409 (NOTE 5)
- 3 - WEIGHT OF 600 BALLS,  $34.5 \pm 1.5$  GRAMS.
- (A) 4 - APPROVED SOURCE:- MINNEAPOLIS - HONEYWELL REGULATOR CO, HOPKINS, MINN. HAMMERMILLED, FLASHED. (NOTE 6)
- 5 - APPROVED SOURCE:- HARTFORD STEEL BALL CO, HARTFORD, CONN. EITHER DOUBLE - FLASHED OR; HEADED, FLASHED AND UNGROUND (NOTE 6).
- 6 - ALL SOURCES MUST SUPPLY AN ITEM EQUIVALENT TO THE MANUFACTURER'S ITEM INDICATED. ORDNANCE CORPS APPROVAL REQUIRED.

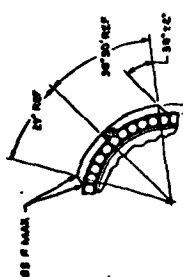
UNLESS OTHERWISE SPECIFIED	ORIGINAL DATE OF DRAWING <b>SEPT 27, 1957</b>	<b>BALL</b>		<b>PICATINNY ARSENAL</b>  <b>ORDNANCE CORPS</b> <b>DEPT. OF THE ARMY</b>  <b>DOVER, NEW JERSEY</b>				
DIMENSIONS ARE IN INCHES TOLERANCES ON FRACTIONS DECIMALS ANGLES	DRAFTSMAN <i>W</i>					CHECKER		
	TRACER					CHECKER		
	ENGINEER <i>W</i>					ENGR		
MATERIAL  <b>SEE NOTE 2</b>	SUBMITTED  <i>A. G. W.</i> ORD CORPS	<b>SCALE</b>		DWG SIZE  <b>A</b>	<b>6798328</b>			
HEAT TREATMENT	APPROVED BY ORDER OF THE CHIEF OF ORDNANCE <i>H. C. G.</i> ORD CORPS					UNIT WT	SHEET	OF
FINAL PROTECTIVE FINISH								

2-70

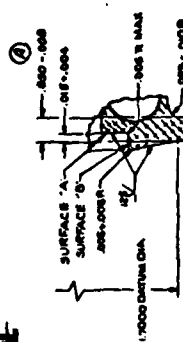


REVENUES		EXPENDITURES	
Year	Amount	Year	Amount
1924	3746	1924	3746
1925	3862	1925	3862
1926	4151	1926	4151
1927	4083	1927	4083
1928	3850	1928	3850
1929	5624	1929	5624
1930	37720	1930	37720
1931	41638	1931	41638
1932	53021	1932	53021
1933	71268	1933	71268
1934	61510	1934	61510

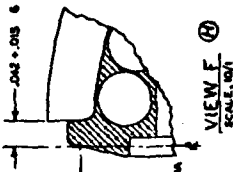
**TESTAMENT**



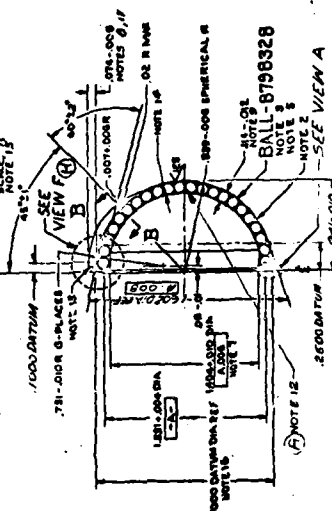
SECTION B-B



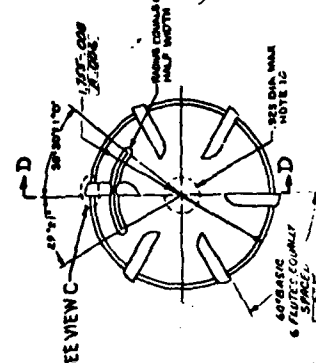
**VIEW A**



EW F ®



2 SEE VIEW A



SEE VIEW C-5

SECTION D-L

DECLASSIFIED OCT 74 PER AUTHORITY MSG AMCIAM  
 (K) 291507Z Oct 74 - Subj: AMCR 380-3 SECURITY  
 MEMPHIS 000000Z OCT 74 04 000000Z OCT 74

① RECORDED IN SF 8835AS

[illegible]

C-12

THE

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# SWORN STATEMENT

For use of this form, see AR 190-30; the proponent agency is Office of The Provost Marshal General.

LOCATION DCASPRO Plant Office Hopkins	DATE 2-25-77	TIME 1030	FILE NUMBER
LAST NAME, FIRST NAME, MIDDLE NAME HEREN, JOHN GERHARDT	SOCIAL SECURITY NUMBER. 476-18-9268		GRADE/STATUS GS-12/Supvr
ORGANIZATION OR ADDRESS DCASPRO Honeywell Quality Assurance Rep 600 2nd Street NW, Hopkins, MN 55343			

I John G. Heren

WANT TO MAKE THE FOLLOWING STATEMENT UNDER OATH:

concerning the contents of the steel barrels sunk in Lake Superior. The basics are (1) classified material was being manufactured at Honeywell locations (2) due to problems no classified smelting facility was available (3) safeguarding and storage of this volume of scrap material from mass production was not feasible. It was determined that sinking the material to a great depth in Lake Superior was the most economical and secure method of disposal. The Army Material Command arranged for the material as generated to be placed in 55 gal. steel drums with concrete poured in the base, classified material to within approximately 6 inches of top and a layer of concrete on top. Holes were punched in the side to allow water to enter. (Originally this was not done and some barrels floated due to their displacement being greater than the weight.) These barrels were stored until a quantity sufficient to justify the use of a Corp of Engineer's barge and tow by the Coast Guard. They were then transported by semi-truck under guard to Duluth or Superior, loaded on the barge and then to a point selected by the tow Captain for dumping. This was witnessed by various employees of the Chicago Procurement District or Chicago Ordnance District. The material as generated consisted of two types of metal parts. One type was an embossed strip steel that was formed into hemispheres. Both the flat embossed strip cut into pieces and hemispheres with connecting parts would be in some barrels. The second type was a die cast aluminum with steel shot in a matrix; this could be hemispheres, broken pieces of hemispheres or ingot consisting of shot and aluminum matrix. In addition, small quantities of expended test items were placed in a few barrels. I was a Supervisor of Government Quality Assurance personnel during this period and the course of my duties took me thru these areas each day and I personally saw the content of 75% to 80% of the barrels as they were being filled. In addition, all the barrels filled at the Bldg 502 Honeywell facility were reviewed by one of our personnel prior to final cementing. Further if memory can be relied upon, I believe, that there were a few barrels (no more than 6) of material from Hopkins Honeywell included in one shipment, these contained thermal battery parts and materials. To the best of my knowledge and memory this was the content of all barrels filled at the Honeywell facility and shipped to Lake Superior for disposal. The items being manufactured at the Bldg 502 Honeywell facility at that time were the upper and lower shell for the T57(M43) munition and upper and lower hemispheres for the AM4 and M40 grenades.

EXHIBIT NONE	INITIALS OF PERSON MAKING STATEMENT <i>John G. Heren</i>	PAGE 1 OF 1 PAGES
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ADDITIONAL PAGES MUST CONTAIN THE HEADING "STATEMENT OF \_\_\_\_\_ TAKEN AT \_\_\_\_\_ DATED \_\_\_\_\_ CONTINUED." THE BOTTOM OF EACH ADDITIONAL PAGE MUST BEAR THE INITIALS OF THE PERSON MAKING THE STATEMENT AND BE INITIALED AS "PAGE \_\_\_\_\_ OF \_\_\_\_\_ PAGES." WHEN ADDITIONAL PAGES ARE UTILIZED, THE BACK OF PAGE 1 WILL BE LINED OUT, AND THE STATEMENT WILL BE CONCLUDED ON THE REVERSE SIDE OF ANOTHER COPY OF THIS FORM.

DA FORM 2823

SUPERSEDES DA FORM 2823, 1 JAN 66, WHICH WILL BE USED.

13

## AFFIDAVIT

I, John L. Heren HAVE READ OR HAVE HAD READ TO ME THIS STATEMENT WHICH BEGINS ON PAGE 1 AND ENDS ON PAGE 1. I FULLY UNDERSTAND THE CONTENTS OF THE ENTIRE STATEMENT MADE BY ME. THE STATEMENT IS TRUE. I HAVE INITIALED ALL CORRECTIONS AND HAVE INITIALED THE BOTTOM OF EACH PAGE CONTAINING THE STATEMENT. I HAVE MADE THIS STATEMENT FREELY WITHOUT HOPE OF BENEFIT OR REWARD, WITHOUT THREAT OF PUNISHMENT, AND WITHOUT COERCION, UNLAWFUL INFLUENCE, OR UNLAWFUL INDUCEMENT.

WITNESSES:

Robert DeStegall  
James J. Fog

ORGANIZATION OR ADDRESS  
 DCASPRO Honeywell, 600 2nd Street NW  
 Hopkins, MN 55343

ORGANIZATION OR ADDRESS

INITIALS OF PERSON MAKING STATEMENT

John L. Heren

John L. Heren  
 (Signature of Person Making Statement)

Subscribed and sworn to before me, a person authorized by law to administer oaths, this 2nd day of March, 1982 at Hopkins, Hennepin County

Corwin Jacobson  
 (Signature of Person Administering Oath)

CORWIN JACOBSON

(Typed Name of Person Administering Oath)

Notary Public

(Authority To Administer Oaths)

PAGE 1 OF 1 PAGES

MEMORANDUM  
FOR ALL INTERNAL COMPANY CORRESPONDENCE

HONEYWELL

DATE: September 17, 1959

COPIES TO: D. Schramm  
T. Long  
W. Mernik

TO: M. Paschke

FROM: B. Brooks

SUBJECT: Tumbling Scrap Hemispheres and  
Runners to Salvage Raw Material

The scrap has been tumbled using (4) different conditions of the load in the barrel or mixture of rock to scrap. It has been determined that the best conditions would be about 60% rock - 40% scrap and about one-third of a barrel full of material. This mixture should be tumbled in water for about 8 hours to remove 60% of the raw material.

To handle the amount of scrap produced on the line would require (2) tumbling barrels as large as the DB-400 Almco barrels now in use in the ball group. The barrels would have to be built special to stand the action of the 6" to 8" stones. A barrel with doors with 1/8" diameter holes may work better to remove the raw material as it is broken free. If the small pieces are left in the barrel, they act as a cushion to prevent further breakage of material.

The (2) barrels would have to be run steady for at least 6 weeks, 3 shifts to tumble the scrap available. After this scrap is all used up, it would require 16 hours a day to handle the scrap created each day.

Williams Patent Crusher and Pulverizer Company Inc. can supply a GP156 hammermill for \$1299.00, less motor and installation. This hammermill should handle this job and break up all the scrap each day in about 2 hours. The scrap that is available could all be salvaged in 2 weeks and with the present shortage of raw material this would be to everyones advantage.

As a comparison, it would require about 50 hours to break up a 1000 pounds of scrap with the tumbling barrel and about 3 hours with the Williams' hammermill. The balance of the operations would be about the same for the salvage of the raw material. This does not mean the operator would have to be at the tumbling barrel for the full 50 hours, but the labor would be at least 9 hours/M lbs. using the tumbling barrels.

It is estimated that the hammermill would be a cleaner operation than the tumbling barrels and would require 1/4 of the floor space required for the tumbling barrels.

-2-

The small amount of raw material salvaged to date points out that it is possible to salvage this material and return it to useable raw material. The dimension will be changed .0005 to .001, but the material will still be well within spec.

It is recommended that a Williams' hammermill is purchased or rented as soon as possible and this salvage program is worked out, both to salvage the raw material and to clean up the die cast area.

BB:fz

16

DISPOSITION FORM

SECURITY CLASSIFICATION (IF ANY)

SEP 28, 1959

FILE NO. ORDEC-X

SUBJECT Disposal of Scrap Material  
Contract DA-11-022-ORD-3019

TO Commanding Officer  
Chicago Ordnance  
District

FROM Special Representative  
of Commanding Officer

DATE 22 Sept 1959 COMMENT NO. 1  
Capt Dean/oj

1. The enclosed Memorandum, which was prepared by Minneapolis Honeywell Regulator Company, reflects the results of experimental work carried on as a result of District recommendations relative to the above subject. The results of this experiment indicate that the recovery of salvage raw material as a result of tumbling would result in considerable equipment to be acquired as well as the necessity for accruing considerable cost from direct labor.

2. Present plans call for the disposal of accumulated scrap at Bldg. 502 by dumping in Lake Superior with the assistance of the U. S. Army Corps of Engineers. This action has become necessary due to the large accumulation of scrap material and the delay in arriving at the feasibility of this suggested method of disposal.

3. It is requested that the enclosed Memorandum be reviewed by appropriate persons and that expeditious action be taken to resolve the system for disposal of this material which must be used in the future.

P. R. DEAN  
Capt, Ord Corps

1 Incl  
MIR Memo dtd 9/17/59

CC - Major Vanzant  
A. H. Sundfor  
Herman Barnett  
W. M. Livingston

017

Mr. Barnett/gcb/351

ORDEC-DM

29 September 1959

SUBJECT: Use of Equipment in Duluth Minnesota  
Minneapolis-Honeywell Regulator Company  
Contract No. DA-11-022-ORD-3019

THRU: Division Engineer  
U. S. Army Engineering Division  
North Central Division  
536 South Clark Street  
Chicago 5, Illinois

TO: U. S. Army Engineering District St. Paul  
1217 U. S. Post Office and Custom House  
180 East Kellogg Blvd.  
St. Paul 1, Minnesota

1. It is requested that the services of the Lake Superior Office at Duluth, Minnesota, be made available for the disposal of classified scrap material under subject and allied contracts. Mr. Knolton of your organization has been contacted and indicates the equipment is available and has performed this type of service for other Department of Defense Agencies.

2. The Contractor will bear the cost of the use of the equipment. He will also furnish transportation and guard service for material from Minneapolis to Lake Superior. It is estimated that the amount of scrap material will weigh approximately 13,000 pounds, including preparation for disposal.

3. Request a copy of your action be made available to this office at the earliest possible date.

FOR THE COMMANDER:

Copies Furnished:  
Central File (DOC)  
Capt. Dean (Twin Cities Insp)

JOS. E. WALKER  
Assistant

Division Engineer  
U. S. Army Engineering Division  
North Central Division  
536 S. Clark Street,  
Chicago, Illinois.

1. Request utilization of existing available equipment in Duluth, Minn., for the disposal of classified scrap material under classified contract.
2. The contractor will bear the cost of the use of the equipment. Mr. Knolton, Lake Shipper Officer has been contacted and indicates the equipment is available, and that he has done this type of work before. The contractor will furnish transportation and guard service for material from Minneapolis to Lake Superior. This letter should be written and hand carried to the Chicago Office of the Division Engineer, and after it is approved, sent direct to me in Minneapolis. I will then hand-carry the information to the St. Paul Engineer Office and then to the Lake Shipper Office.

CAPTAIN DEAN

Flanagan X626

-----

Dist Eng

~~Corps of Eng~~

US Army Eng Dist  
St Paul  
1217 US Post Off & Custom House  
180 E. Kellog Blvd  
St. Paul, Minn

-----

Avail of Mr. Knowlton

-----



ORDEC-X

SUBJECT: Disposal of Scrap Material, Contract DA-11-022-  
ORD-3019

THRU: Commanding Officer,  
Chicago Ordnance District

FROM: Maj. C. V. Vanzant DATE: 1 Oct. 1959  
COMMENT #2

TO: Capt. P. R. Dean,  
Special Representative of  
Commanding Officer

Major Vanzant/ar

1. Arrangements have been made to expedite the disposal of accumulated scrap as reflected in Comment #1 above. Details of these arrangements were discussed during Capt. Dean's visit of 29 and 30 September.

2. With reference to the Memorandum submitted by M. H. R. proposing an additional method of segregating scrap material, it is requested that the following additional information be obtained from the contractor for presentation to this office.

- a. Confirmation that the process recommended has been sufficiently explored to produce the results desired.
- b. Preparation of an estimate of costs for the reprocessing of the metal recovered that will be reused.
- c. The costs of a motor for the hammermill and the expense for installation will also be required.

3. Screening of Government sources for the availability of a hammermill of the same or like model has been initiated.

4. In the meantime, it may be the desire of M. H. R. to prepare a purchase order with complete justification for the needs of this equipment with cost estimates as enumerated above for future presentation.

  
J. E. WALKER

C-21

## DISPOSITION FORM

## SECURITY CLASSIFICATION (IF ANY)

FILE NO. ORDEC-X

SUBJECT Use of Army Engineer Equipment in Duluth, Minn.  
for the Disposal of Classified ScrapTO Commanding Officer  
ATTN: Mr. BarnettFROM Special Representative  
of Commanding OfficerDATE 7 Oct 1959 COMMENT NO. 1  
Capt. Dean/oj

1. Reference is made to letter dated 29 September 1959, subject as above, which was sent through the Division Engineer in Chicago to the Engineering District in St. Paul. Mr. L. A. Hauser, Jr., Chief of the Operations Office in St. Paul, concurred in the basic letter and on 6 October 1959, a trip was made to the District Engineer's Office in Duluth to further investigate the necessary procedures.

2. It was found that adequate material handling equipment as well as vessels were available for this operation, and a minimum amount of material handling would be necessary due to proximity of docks and type of vessels to be used. Contact was made with Mr. Wang and Mr. Knowlton, who were most cooperative in their actions. The scrap material which we disposed of by this method is presently being prepared for movement by Minneapolis Honeywell. The present plans are to utilize commercial van-type vehicles between Minneapolis and Duluth. Security arrangements have been coordinated with the Commanding Officer of the M.P. Detachment at Fort Snelling, Major Stapleton, and necessary guards will be made available for the shipment on route as well as the time interval prior to sinking. It is assumed that this disposal will be accomplished within the next two weeks.

5/  
P. R. DEAN  
Capt, Ord Corps

cc - Major Vanzant  
Mr. Walker

#### CONVERSATION RECORD

Name: Przewlocki, William  
Date: 10/26/59  
With: Mr. T. Dillom  
Section:  
Representing: T. C. A-I.0  
Branch: Weapons Branch  
Address: 1006 W Lake S.  
City: Minneapolis, Minn.  
Telephone: FE 9-3612  
Extension: 293/294  
Contract: 3019

#### PRELIMINARY NOTES

1. Clearance for John Winkie in mail today.
2. Not necessary that inspector accompany classified scrap to Duluth; provided convoy is under military control throughout journey. Suggest some certification be obtained showing that amount of scrap picked up was actually dumped.

#### CONVERSATION IN BRIEF

Capt Dean will be in Duluth. He will if possible, witness dumping of scrap from Corps of Engineers barge. If weather will not permit, immediate barge movement, statements will be secured from Corps of Engineers personnel.



11  
75

DEPARTMENT OF THE ARMY Mr. Eichhorn/rhc/584-3816  
U. S. ARMY ENVIRONMENTAL HYGIENE AGENCY  
ABERDEEN PROVING GROUND, MARYLAND 21010

HSE-EW-A

30 JUN 1977

SUBJECT: Environmental Hazards of Waste Disposal in Lake Superior

Commander  
USA Armament Materiel Readiness Command  
ATTN: Environmental Quality Office  
Rock Island, Illinois 61201

1. References.

a. FONECON, 17 June 1977, between MAJ Daniel Wilking, your Headquarters, and Dr. Donald Emig, this Agency.

b. FONECON, 28 June 1977, among MAJ Wilking, Dr. J. T. Wyatt, and Mr. Henry C. Eichhorn, this Agency.

2. Reference 1a requested this Agency to evaluate, on a worst case basis, the potential environmental hazard due to chemical toxicity of disposal in Lake Superior, during the period, 1957-62, of six sealed 55-gallon drums containing potential toxicants (lithium chloride, barium and calcium chromate, calcium chloride, and zirconium metal). The following simplifying assumptions were proposed by your Headquarters.

a. Instantaneous dissolution and diffusion of contents of the drums.

b. A mixing zone 1 mile in diameter 100 feet deep.

c. Each drum filled by about 50 percent with each toxicant.

3. Reference 1b requested a separate evaluation of environmental hazard due to chemical toxicity of some 1440 drums (55 gallons) of steel and aluminum parts, consisting of six dumps at the same site during the period, 1957-62. Some efforts have been made to retrieve the drums which, to this date, have been unsuccessful. Findings of this Agency will be a basis for decision as to whether further retrieval attempts will be made.

C-24

HSE-EW-A

SUBJECT: Environmental Hazards of Waste Disposal in Lake Superior

4. Based upon technical considerations summarized in the table appended as an inclosure to this letter, it is our considered judgment that the dump referred to in reference 1a, should the sealed drums open, represents negligible environmental hazard with the exception of chromium, due to barium and calcium chromate, which represents low hazard as a result of propensity of chromium to bioaccumulate in biota of the food chain leading to man. However, we feel that the simplifying assumptions, together with the criterion chosen, have been sufficiently conservative as to cause the probability of the event of bioaccumulation of chromium to be exceedingly small.

5. In our opinion, the environmental hazard due to chemical toxicity of aluminum and steel parts is also negligible. This opinion is based on the exceedingly small solubility of steel and aluminum. Because of this tiny dissolution rate and the vast volume of Lake Superior, we are certain that the dissipative capacity of the Lake far exceeds the dissolution rate of the metals, and that the chemical background of the Lake and of the mixing zone specified will never be exceeded due to this small addition.

6. This Agency recommends that no further attempt be made to retrieve the drums referred.

FOR THE COMMANDER:

1 Incl  
as



JOHN P. PIERCY, P.E.  
COL, MSC  
Director, Environmental Quality

INCL 1 (C-24-2)

ESTIMATED HAZARD DUE TO CHEMICAL TOXICITY IN A CYLINDRICAL MIXING ZONE (ONE MILE IN DIAMETER BY 100 FEET DEEP)

Chemical Species	Maximum Estimated Dump (pounds)	Maximum Concentration Expected (milligrams per liter)	Criteria for* Safe Concentration	Estimated Safe Concentration (milligrams per liter)	Bioconcentration† Factor (milligrams /liter)	Estimated Environmental Hazard
Barium	3305	0.02	A	0.5	8.0	Negligible
Calcium†	1277	0.01	D	75.0	§	Negligible
Chromium	1285	0.01	A	0.05	0.003	Low
Lithium†	1002	0.01	B	5.0	2.0	Negligible
Zirconium	6120	0.05	C	0.14	0.25	Negligible

\* Coded as follows:

- A "Water Quality Criteria, 1972." Nat Acad Sci., Nat Acad Engr., Publ No. EPA-R3-73-033, Wash DC (1973).
- B Hibbard, P.L.. "The significance of mineral matter in water," Jour Amer Water Works Assoc 21, 884 (1934).
- C Based upon the product of a conservative median tolerance limit for fathead minnows (14 milligrams per liter) times a conservative application factor of 0.01 [see National Technical Advisory Committee to the Secretary of the Interior, Water Quality Criteria, US Environmental Protection Agency (1972)].
- D World Health Organization, International Drinking Water Standards, Geneva (1958).
- † Noncritical; see following reference:  
Wood, J.M., "Biological cycles for toxic elements in the environment." Science 183, 1049-1052 (1974).
- ‡ No data.  
Dawson, G.W., 1974. "The chemical toxicity of elements," Battelle Pacific Northwest Laboratories. Document No. BNWL-1815 (1974).

28 APR 1977

MEMORANDUM FOR RECORD:


SUBJECT: Classified Scrap in Lake Superior

1. From the historical records available, which are limited due to required record destruction and the sinking of one tugboat and the burning of another, both with logbooks, the following is the dump dates and depths of the six known dumps of barrels into Lake Superior:

- a. Dump No 1 o/a 27 Oct 59 in not less than 100 ft of water.
- b. Dump No 2 o/a 25 Sep 60 in not less than 100 ft of water.
- c. Dump No 3 o/a 15 Jun 61 in not less than 100 ft of water.
- d. Dump No 4 o/a 14 Oct 61 in not less than 200 ft of water.
- e. Dump No 5 o/a 26 May 62 in not less than 300 ft of water.
- f. Dump No 6 o/a 26 Sep 62 in not less than 300 ft of water.

In addition to water depth, the dumping instructions specified dumping to be done not less than 3 miles from shore.

2. Actual dump sites are not known except for the one which was located with the help of a commercial fisherman who unintentionally caught some barrels in his fishing net and with a sonar device that gives a bottom profile of an area of the lake. The St. Paul District Engineer's Office stated that without a starting point, such as given by the fisherman, the remaining dump sites would be nearly impossible to locate.

  
JAMES R. HAGER  
CPT, CE  
Civil Engineer





6479-C-11526-NCS77 8 June 1977

DEPARTMENT OF THE ARMY  
ST PAUL DIST, CORPS OF ENGINEERS  
1135 US POST OFC & CUSTOM HOUSE  
ST PAUL MN 55101



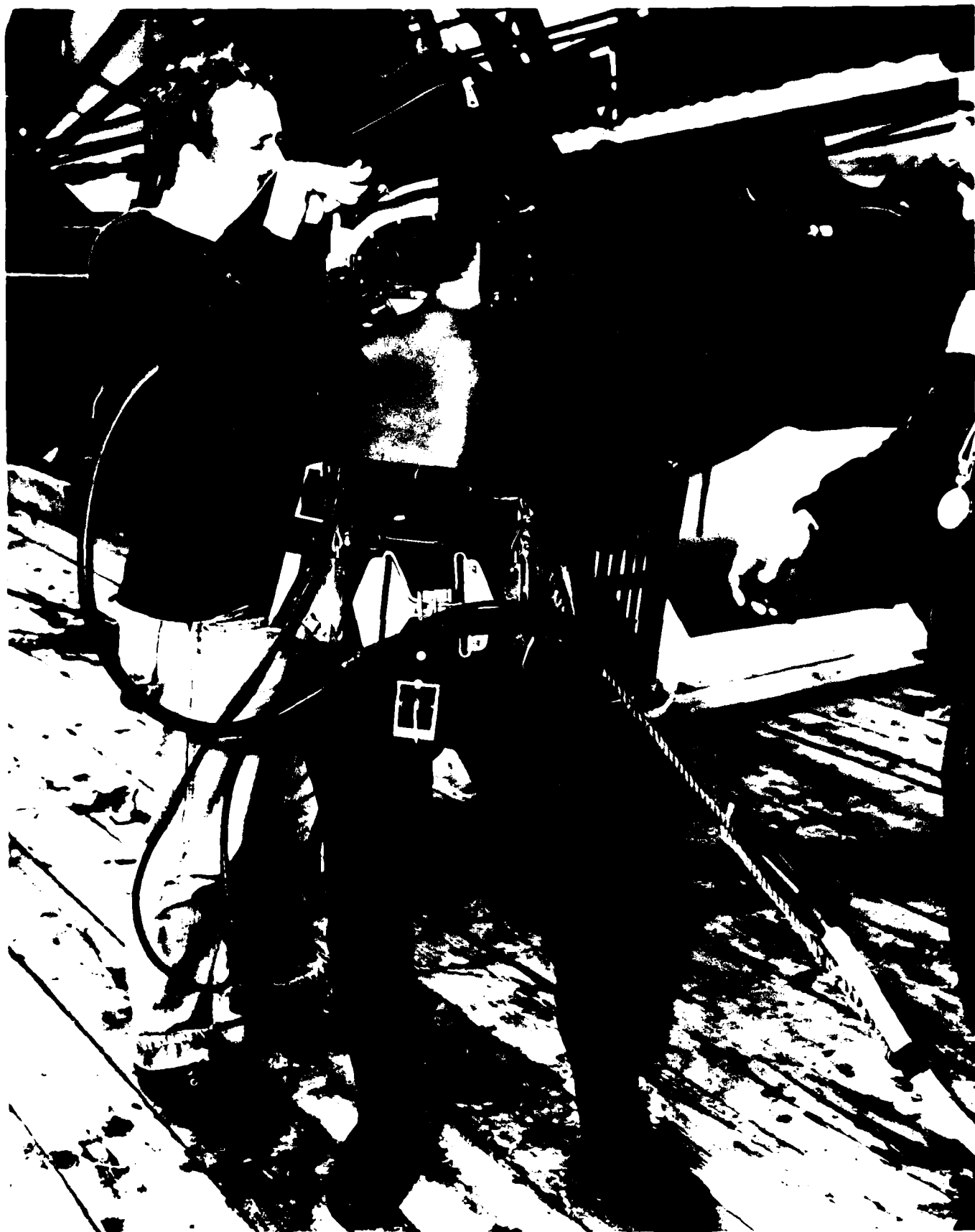
6479-C-11530-NCS77 8 June 1977

DEPARTMENT OF THE ARMY  
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ST PAUL MN 55101



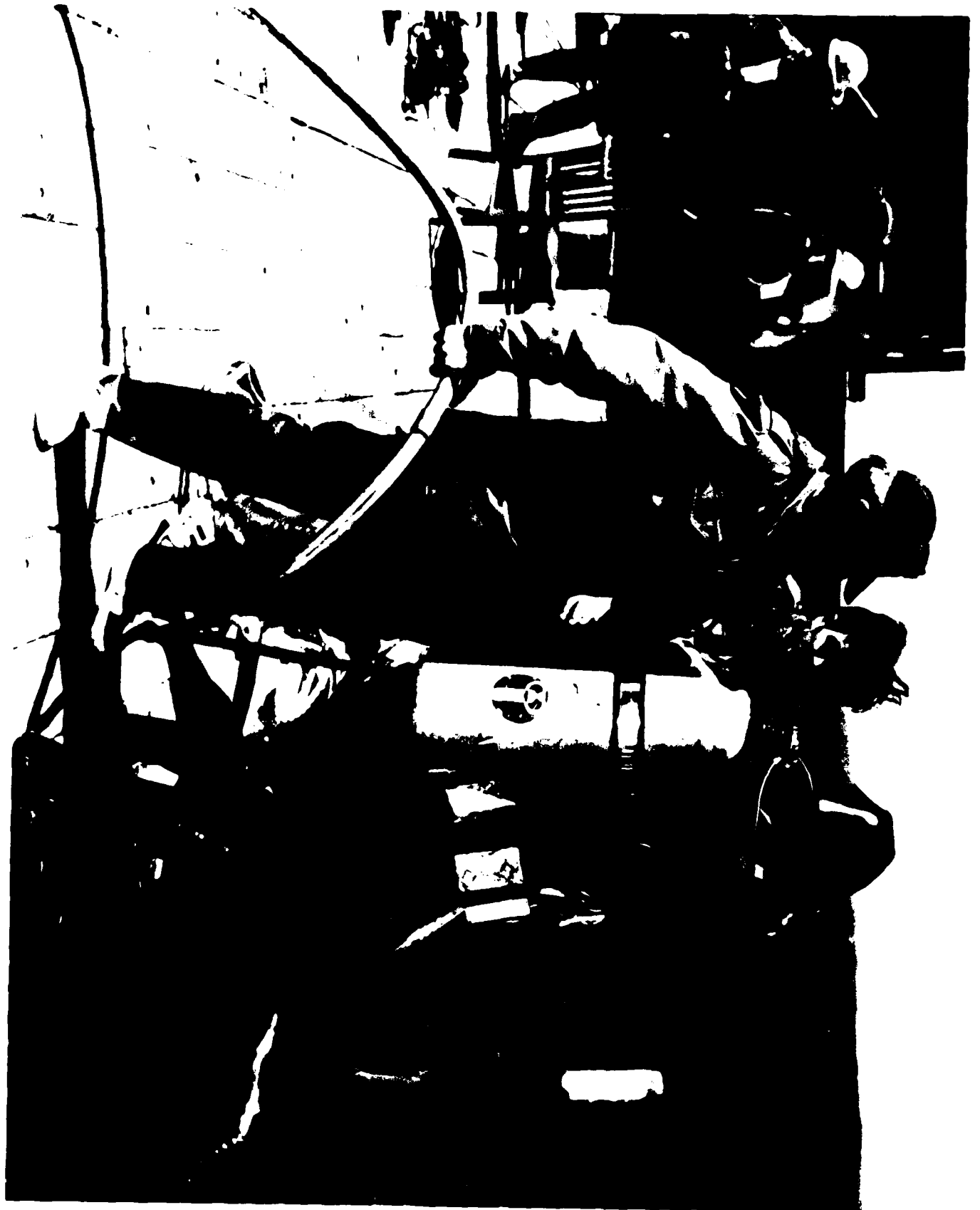
6479-C-11538-NCS77 8 JUNE 1977

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6479-C-11535-NCS77 8 JUNE 1977

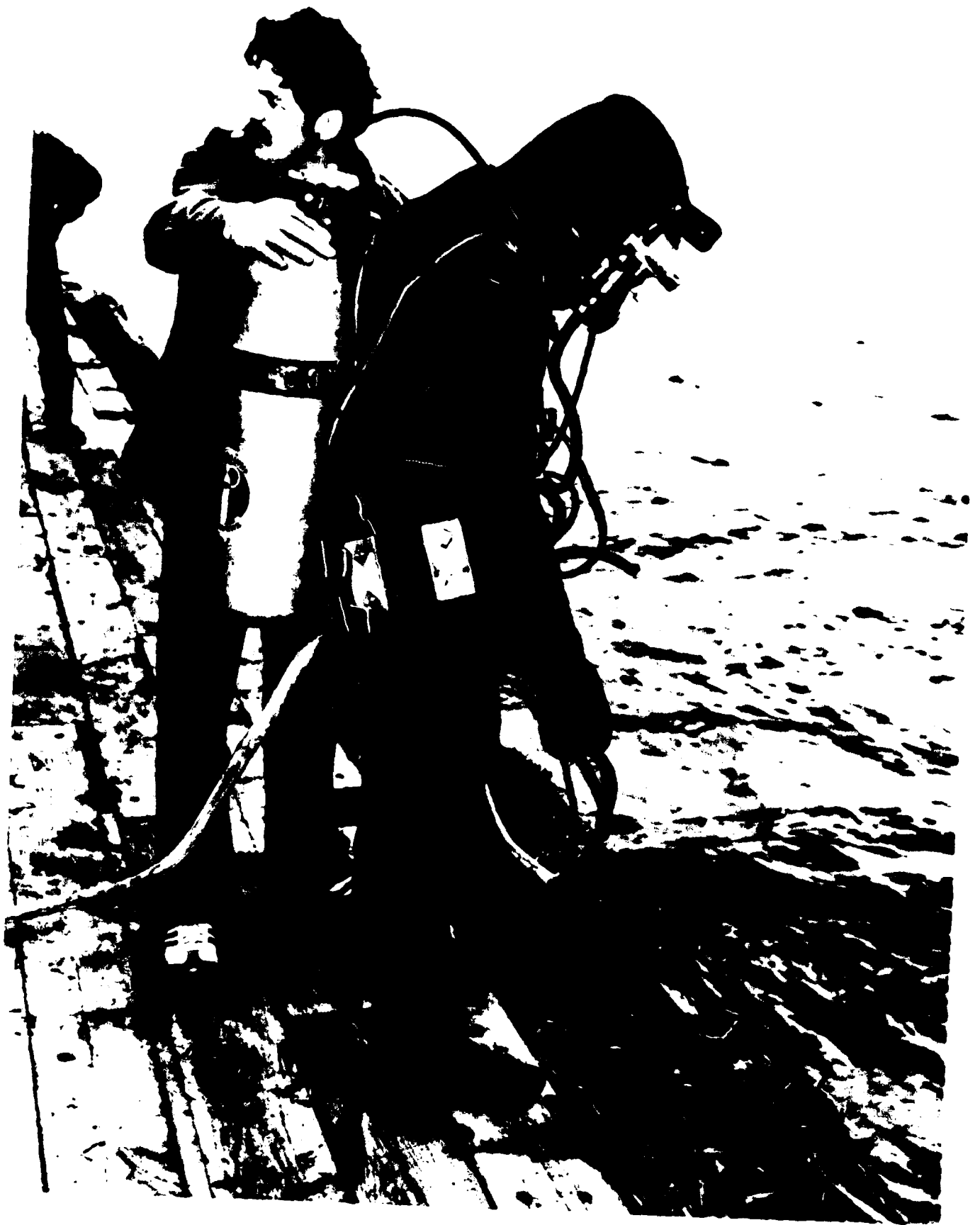
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6479-C-11542-NCS77 8 JUNE 1977

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6479-C-11531-NCS77 8 JUNE 1977

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6479-C-11525-NCS77 8 JUNE 1977

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6479-C-11534-NCS 8 JUNE 1977

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6479-C-11539-NCS77 8 JUNE 1977

DEPARTMENT OF THE ARMY  
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ST PAUL MN 55101

**US ARMY ARMAMENT MATERIEL READINESS COMMAND**  
**PUBLIC AFFAIRS OFFICE** **ROCK ISLAND, IL 61201**  
**(309) 794-5838, 5421, 6144**  
**AUTOVON 793-**

# **NEWS RELEASE**

**DATE:** 29 April 1977

**NO:** 96-77

PSC

## ARMY TO RAISE SCRAP FROM LAKE BOTTOM

HQ, US ARMY ARMAMENT MATERIEL READINESS COMMAND (ARRCOM), ROCK ISLAND, ILLINOIS,

29 April 1977 -----Several barrels of formerly classified scrap material dumped by the Army in Lake Superior nearly 20 years ago will be raised from the lake bottom to ascertain their exact contents, Army officials announced here today.

The material, dumped during the late 1950's and early Sixties, has recently evoked concern from a number of Government officials and environmentalist groups as to whether the scrap was affecting the lake's water quality.

Exhumation of several barrels will be undertaken as soon as weather conditions and plans are finalized, the Army announced. A detailed analysis of the scrap, made up of such metals as zinc, steel and aluminum, will be done by the Environmental Research Laboratory in Duluth.

Although water samples, taken in December 1976 by the EPA, Duluth, around one of the known dump sites, indicated good water quality, Army officials acknowledge that environmentalists and other interested parties will continue to speculate on the barrel contents until the analysis of the material is made public.

Some 1400 barrels were disposed of in the lake during 1959 through 1962. The residual scrap material was left over from production lines of Honeywell, Inc., the Minneapolis electronics firm which had an Army contract to produce fragmentation grenades.

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E-1

**US ARMY ARMAMENT MATERIEL READINESS COMMAND**  
**PUBLIC AFFAIRS OFFICE** **ROCK ISLAND, IL 61201**  
**(309) 794-5838, 5421, 6144**  
**AUTOVON 793-**

# **NEWS RELEASE**

**DATE:** 16 May 77

**NO:** 113-77

PSC

## ARMY DIVERS TO RAISE WAR SCRAP

HQ, US ARMY ARMAMENT MATERIEL READINESS COMMAND (ARRCOM), ROCK ISLAND, ILLINOIS, May 16, 1977 ----- An Army diving team will raise one or more barrels of formerly classified scrap materiel from Lake Superior during the second week in June, an Army spokesman said here today. Colonel William T. Green, Chief of Staff of the US Army Armament Materiel Readiness Command, announced that divers from the 86th Engineer Detachment (Diving) from Fort Belvoir, Virginia, will be in charge of the recovery operation. The dive will be subject to weather conditions, said Colonel Green.

Some 1400 barrels of scrap were dumped in the Lake during the late 1950's and early Sixties. The scrap was left over from the production lines of the Minneapolis-Honeywell Regulator Company which was under Army contract to produce fragmentation grenades. The process of casting the shell so as to explode into uniform particles was secret; the scrap from the manufacturing process was classified. It was later de-classified during the Vietnam War.

A fully equipped derrick boat with decompression chamber and other diving apparatus will act as mother ship for the salvage operation. Army divers hope to locate one of the suspected dump sites in some 120 feet of water near the Knife River estuary.

According to Army sources, once the site is located, divers will bring one or more barrels to the surface. Representatives from the Environmental Research Laboratory, Duluth, will be on hand to observe and later analyze the contents of such metals as zinc, steel and aluminum.

- M O R E -

N.R. 113-77  
Page 2

Army officials acknowledge that environmentalist groups have been concerned over the barrel contents. Said Green, "Ever since the barrels became a subject of discussion, rumors have been flying that they contain some form of toxic or radioactive substance. We want to lay those rumors to rest."

Although water samples taken by the EPA last December discount any water impurities, public speculation has continued.

- E N D -



6479-C-11532-NCS77 8 JUNE 1977

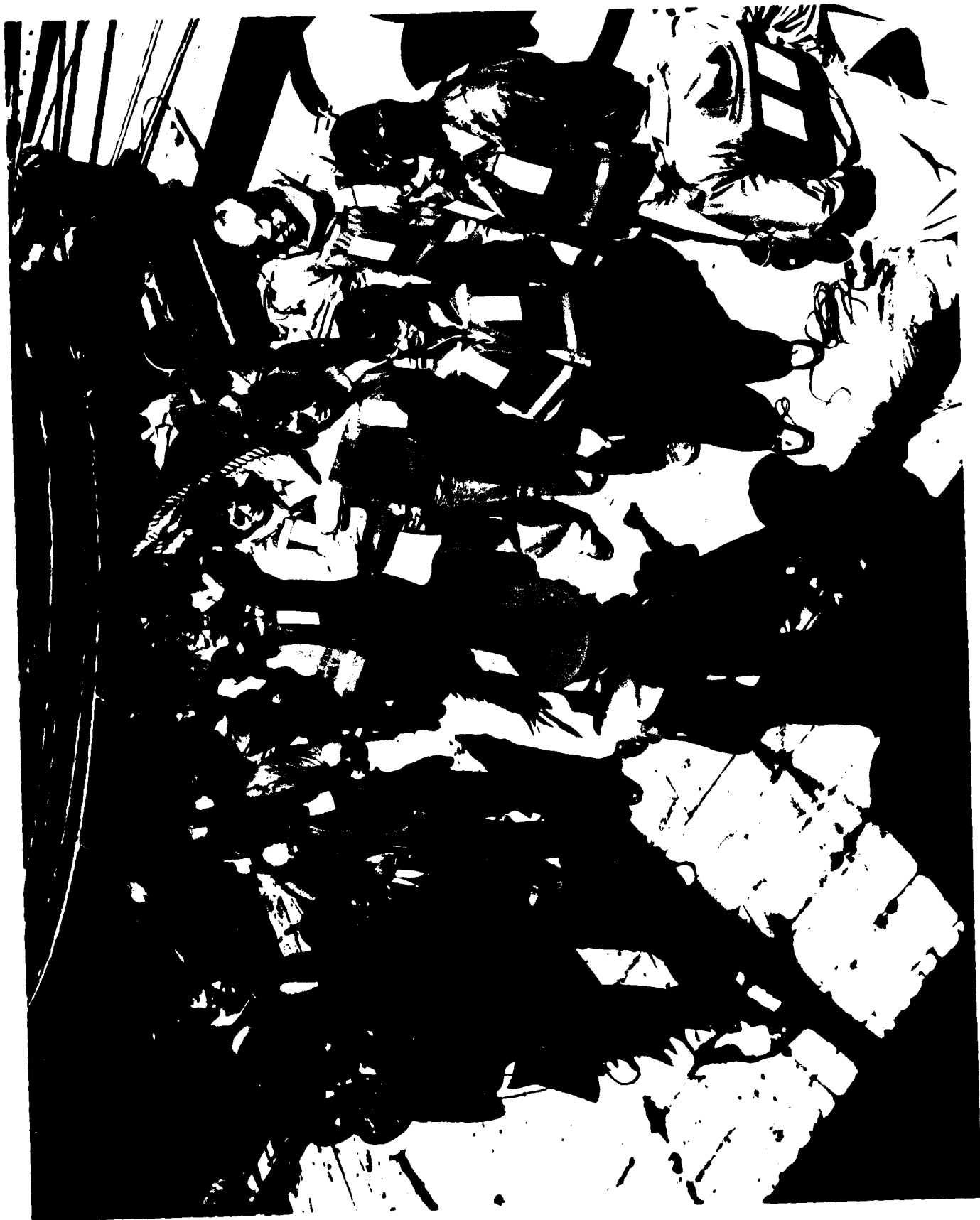
DEPARTMENT OF THE ARMY  
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6479-C-11552-NCS77 9 JUNE 1977

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6479-C-11556-NCS77 9 JUNE 1977

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6479-C-11546-NCS77 9 JUNE 1977

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Headquarters, US Army Armament Materiel  
Readiness Command, Rock Island, Illinois

N E W S   R E L E A S E

DATE: 10 June 1977

Dateline: Duluth, Minnesota, 10 June 1977 - - A three day search by Army divers failed to locate and recover barrels of formerly classified scrap materials from Lake Superior, an Army spokesman said here today.

Some 1400 barrels, sunk in depths ranging from 120 to 500 feet of water nearly twenty years ago, contained left-over metal scraps from the production lines of the Minneapolis Regulator Company which was under Army contract to produce metal parts for controlled fragmentation munitions. These munitions were classified during the late 'fifties' and early 'sixties', and later de-classified during the Vietnam War. The Army diving team from the 86th Engineer Detachment (Diving) from Fort Belvoir, Virginia, made approximately 12 dives and spent more than 6 hours on the lake bottom searching a suspected dump site one and half miles off the North Shore of the Lake, some 10 miles from Duluth.

Working with underwater detection gear, including TV cameras and Sonar equipment they searched for the elusive barrels. The Army crew were joined in their quest by Doctor Thomas Johnson of the University of Minnesota, one of the country's leading experts on underwater detection.

Colonel William T. Green, Chief-of-Staff for the U.S. Army Armament Materiel Readiness Command, Rock Island, Ill., stated that while he was disappointed that a sample barrel could not be opened to convince skeptics of the (barrel) contents, sufficient evidence does exist from old records and eye-witness accounts that the contents are as the Army has said all along.

He emphasized that no evidence exists that the barrels are contaminating the

Lake or hazardous to public health. "But, I'm also mindful of those who have express concern over this particular issue. However, it does not change the documented evidence we uncovered during an exhaustive investigation, that these containers are filled with other than metals of zinc, steel and aluminum encased in cement. They are neither toxic nor radioactive", he said. "It's been a tough decision to call-off the operation but, we've given it our very best try. It's expensive and to continue would be a waste of the taxpayer's money", he concluded.

##

DEPARTMENT OF THE ARMY  
St Paul District Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

THE EVENING TELEGRAM

SUPERIOR, WISC.

9 JUNE 1977

METAL WASTE BARREL SEARCH CONTINUES

DULUTH, Minn. (UPI) - U.S. Army Corps of Engineers divers were back in Lake Superior today attempting to locate barrels dumped into the lake in the late 1950s.

Six divers searched the shallowest of four known spots where the barrels were dumped Wednesday, but failed to come up with anything.

The barrels, containing waste metal from fragmentation grenades produced by Honeywell for the military, have been the subject of a controversy over whether they are polluting the lake.

Water samples taken from the area around the barrels last fall showed no difference from water in other parts of the lake, but officials of the Minnesota, Wisconsin and Michigan Departments of Natural Resources demanded further testing.

The 1,437 barrels were dumped along the North-Shore near the Knife River between 1959 and 1962. At the time the contents were classified as secret, but they have since been declassified.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

THE DULUTH HERALD

DULUTH, MINN.

9 JUNE 1977

PHOTO

NOT

REPRODUCIBLE

TRACKING BARRELS - Divers were back in Lake Superior today searching for 1,400 barrels sunk in the mid 1950s and early 1960s by the U.S. Army. The divers scoured the bottom in 140 feet of water Wednesday about 10 miles east of the Duluth ship canal, but found only tracks possibly left by 55-gallon steel drums as they moved with underwater currents. The Corps of Engineers plans to lift four of the drums and examine the contents. A Corps official expects the operation will confirm research indicating the drums "contain absolutely nothing but scrap metal."



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St. Paul District, Corps of Engineers  
Lake Superior Area  
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Duluth, Minnesota 55802

DULUTH NEWS-TRIBUNE

DULUTH, MINN.

9 JUNE 1977

PHOTO  
NOT  
REPRODUCIBLE

This is bottom of Lake Superior, as seen thru a television monitor aboard recovery vessel. The dark streak toward the bottom of the screen is believed to be a "barrel track."

D i v e r s s e e ' t r a c k s '  
b u t . . . n o b a r r e l s

By RICHARD L. POMEROY  
Of the News-Tribune Staff

Divers Wednesday were tracking barrels along the Lake Superior bottom in 140 feet of water.

That's right-barrel tracks.

At least, that's what the divers believe they saw. That's what they reported when they came to the surface without sighting any of the 1,400 mysterious barrels sunk in the lake during the mid 1950's and early 1960's.

The US Army and the US Army Corps of Engineers struck out Wednesday in the underwater search for the barrels, supposedly containing scrap metal which during that period was classified as "secret". The hunt will continue today. Involved is a team of six divers from the army's .....

Continued on Page 11A, Column 1

PHOTO  
NOT  
REPRODUCIBLE

Staff photo by Karl Jaros  
porthole aboard a tug frames diving platform action on Lake Superior ----the Army attempts to recover barrels it dumped in the Lake more than ---- years ago.

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DULUTH NEWS-TRIBUNE

DULUTH, MINN.

9 JUNE 1977

NO BARRELS SIGHTED

(From Page One)

36th Engineer Detachment at Ft Belvoir, VA., with COL William T. Green, Chief of Staff, U.S. Army Materiel Readiness Command, Rock Island, IL., as project officer.

If none of the barrels is located and raised for inspection, "we'll have a tough decision to make" on whether to continue the search, the project officers said as the first day produced no results.

Well, no tangible results. Divers reported seeing marks on the lake bottom, marks they suggested could have been made in the thin layer of silt by the barrels (actually 55-gallon steel drums) if they rolled with underwater currents.

The tracks are the "right distance apart" to have been made by ridges of oil drums of the type used to dispose of the material. Sgt Herbert Buchite, the chief diver said.

Divers have been following one of the tracks "because at this stage it's the only thing we have going for us," he added.

The tracks were seen by divers on the lake bottom and by television monitor watchers aboard the corps' derrick barge Coleman on the surface, about 10 miles east of the Duluth ship canal and more than one-half mile off the North Shore.

Locations of the barrels were found by use of sonar last fall and marked on charts. Returning now, the searchers anchored the barge at the most westerly location, but have had difficulty finding any of the barrels.

As the search started Wednesday, Green was confident the divers would locate at least four barrels. He told news media representatives he was certain the operation would confirm research which indicates the "drums contain absolutely nothing but scrap metal."

AD-A083 143

ARMY ARMAMENT MATERIEL READINESS COMMAND ROCK ISLAND IL  
CLASSIFIED SCRAP IN LAKE SUPERIOR.(U)  
JUL 77 J R HAGER, D L WILKING, T J WASH

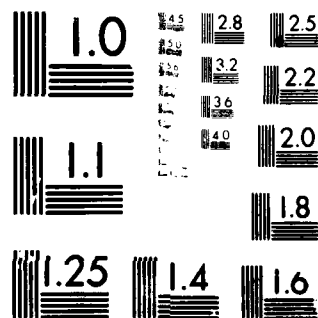
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UNCLASSIFIED

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2 of 2  
AD  
AD-A083 143





MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

No Barrels Sighted--continued.

The barrels are being recovered, he said, "because some people just won't believe that" and examination of the contents will "set the rumors (about toxic substances or radioactive material) to rest."

The materials and the process used in making the small antipersonnel fragmentation bombs no longer is classified as "secret," he said.

The army tried several methods of disposing of the scrap metal, including use of explosives at Camp Ripley, Green said. That failed, and the disposal was made in the lake until a plan was devised to melt the scrap at U.S. Steel's Duluth Works in 1962. The lake dumping ended then.

Divers and television cameras today will continue the search, with the underwater cameras being used at intervals between the 40-minute diving periods.

Water clarity in the area is surprisingly good, media representatives observing the attempted recovery operation noted.

On the deck of the derrick barge they watched television monitors as the camera scanned the lake bottom without use of artificial light.

Divers reported visibility at depths of 125 to 140 feet in that area is from 10 to 15 feet.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

DULUTH NEWS-TRIBUNE

DULUTH, MINN.

10 JUNE 1977

BARRELS PLAYING HARD TO GET YET

The search was almost 13 hours long Thursday but still not one of the approximately 1,400 barrels at the bottom of Lake Superior has been sighted.

For the second day, the US Army Corps of Engineers hunted for the barrels with divers. The barrels are supposed to contain scrap metal classified as "secret" during the mid 1950s and early 1960s when they were dumped into the lake.

At 6 a.m. today the same divers will be on the job - but with different equipment guiding their work.

Dr. Thomas Johnson, University of Minnesota, is back in Duluth to use the same seismographic equipment with which located some barrels last fall.

Courtland Mueller, Lake Superior District corps chief, said he hopes it will be a short and successful day. The equipment was installed on a Coast Guard tug late Thursday and is ready to go, he said.

The barrels are thought to be about 10 to 12 miles up the shore from the Duluth-Superior harbor and in 140 feet of water about one mile offshore.

The barrels are being sought, said COL William T. Green, chief of staff, US Army Materiel Readiness Command, Rock Island, Ill., to confirm research that they contain nothing but scrap metal.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
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Duluth, Minnesota 55802

THE DULUTH HERALD

DULUTH, MINN.

10 JUNE 1977

BARREL HUNT NEARLY OVER

The three-day underwater search for the elusive barrels in Lake Superior may be nearly over.

That communique came about 11 a.m. today from US Army and US Army Corps of Engineers personnel aboard a derrick barge 10 miles northeast of the Duluth ship canal and about one-half mile off the North Shore.

Sophisticated seismographic equipment apparently has pinpointed the location of the barrels, dumped in the lake during the late 1950s and early 1960s. They supposedly contain scrap metal, formerly classified "secret," remaining from production of small anti-personnel bombs.

Divers Wednesday and Thursday were unable to locate the disposal areas, charted last fall by Dr. Thomas Johnson of the University of Minnesota. He returned to the scene today with the same equipment, and a spokesman for the government's recovery team said the barrels may have been located in about 189 feet of water.

The army launched the recovery attempt to quell rumors that the barrels may have contained some toxic or radioactive substances which may be harmful to public health.

11-5-6

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
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Duluth, Minnesota 55802

DULUTH NEWS-TRIBUNE

DULUTH, MINN.

10 JUNE 1977



Staff photo by Charles Curtis

Sgt. Joe Conde heads for the bottom of Lake Superior in Thursday's episode of the Corps of Engineers barrel hunt, while Sgt. Al Hunt handles the diver's lines. See story, other picture on Page 2A.



DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
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Duluth, Minnesota 55802

THE DAILY MINING GAZETTE      HOUGHTON, MICH.      11 JUNE 1977

SEARCH CALLED OFF

UNABLE TO FIND SUNKEN BARRELS

DULUTH, Minn. (AP) - Between 14 and 20 barrels out of 1,400 dumped into Lake Superior by Armed Forces personnel almost 20 years ago have disappeared for the second time.

The barrels, which some had warned might contain toxic or radioactive elements, were located on the lake bottom last December by investigators from the US Army Corps of Engineers.

But Friday, a Corps spokesman said a three-day effort to relocate the barrels and bring them to the surface has been unsuccessful, and the Corps has given up.

"The barrels apparently shifted around a bit and those that didn't bury themselves in silt have worked their way down into deeper water," said Jim Braatz, a spokesman for the Corps' office in St. Paul.

He likened the prospects of finding the missing barrels to "looking for Moby Dick or Bigfoot. The chances of finding them are very, very slight."

The barrels, dumped into Lake Superior near Duluth between 1959 and 1961, were said to contain secret weapons material generated by Honeywell Inc., Minneapolis.

The search for the barrels had been prompted after environmental groups warned that the barrels might contain dangerous substances. However, government officials said the barrels contained scraps from research on new mortar weapons, consisting of zinc, steel and aluminum in a cement casing.

Between 14 and 20 of the barrels were located in 150 feet of water last December, about 10 miles from Duluth and about one and one-half miles from the Minnesota shoreline. Corps Engineers took water samples from the barrel field which was analyzed for possible contaminants.

The results from those tests reported that the water in the barrel field was no different from other waters in Lake Superior.

Blaatz said a team of Army divers and civilian experts spent three days attempting to locate the barrels. The search used a variety of sophisticated instruments, including sonar and metal detectors.

Blaatz said the order to halt the search was given by Col William Green, chief of staff of the US Army Armament Materiel Readiness Command (AARCOM) in Rock Island, Ill.

He said the decision to halt the project was based on cost and on the belief that the barrels probably could not be found.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
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DULUTH NEWS-TRIBUNE

DULUTH, MINN.

11 JUNE 1977

A SEARCH NOT LIKE SHOOTING FISH IN BARREL

By Richard Pomeroy  
of the News-Tribune staff

After three days of underwater searching for some of the 1,400 barrels of scrap material sunk in Lake Superior more than 15 years ago, the score Friday was:

Lake Superior 3, US Army 0

The US Army Corps of Engineers gave up Friday after failing to locate any of the barrels in 125 to 140 feet of water about 10 miles east of Duluth and one-half mile off the north shore.

Army divers, aided by sophisticated seismographic equipment from a barge on the surface, could not find the barrels (actually steel drums) in the areas the electronic gear detected them last fall.

The operation in November pinpointed the apparent location of some of the barrels and water quality tests were made because of concerns expressed by environmentalists about possible contamination of the drinking water supply. The tests indicated nothing unusual about the water quality.

Those expressions led to the just ended attempts to recover some of the barrels for examination of the contents to put to rest rumors that the material may have been toxic or radioactive. The Army had said the material was metal left from the production of small anti-personnel bombs and at the time of the disposal the configuration of the military hardware was classified as "secret."

A spokesperson for the government's recovery team said the efforts were complicated by four-foot waves which made it difficult to effectively scan the lake bottom with the electronic equipment, including television cameras.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

DULUTH NEWS-TRIBUNE

DULUTH, MINN.

19 JUNE 1977

SLSA raps Corps 'excuses'  
for not finding sunken barrels

The Associated Press

The Save Lake Superior Association (SLSA) says it does not accept the U.S. Army Corps of Engineers' "excuses" for not being able to locate any of some 1,400 barrels dumped into Lake Superior nearly 20 years ago.

The corps announced June 10 that it had called off the effort after three days of searching. The barrels were dumped between 1959 and 1971 by Honeywell, Inc., Minneapolis. Honeywell said the barrels contained secret weapons material.

About 14 of the barrels were located in 150 feet of water last December about 10 miles from Duluth. However, a corps spokesman said the barrels apparently had shifted into deeper water since then and could not be located again for removal.

Divers reported seeing marks on the lake bottom which might have been tracks made by ridges on the barrels. However, they found no barrels.

The Save Lake Superior Association complained in a statement Saturday that the corps had been unable to follow the tracks to the "jungle we all know to exist" on the lake bottom.

"Perhaps in the special services of the Army they will find someone who qualifies as a barrel tracker," said the statement approved by the association board and the group's president, Karen Carlson of Duluth.

The association said it now seriously questions whether the alleged testing of water taken last year from near the barrels could have been valid. Those tests showed that water to be indistinguishable from Lake Superior water taken anywhere else.

"We do not accept the corps' excuses," the statement said. "Numerous 750-pound barrels cannot be assumed to have strolled off to parts unknown since last year. If they are not there now, they weren't there then."

The association demanded that the corps resume the search until the matter is settled by testing material from one or more of the barrels.

The search was made after environmental groups said the barrels might contain toxic or radioactive substances. Government officials said the barrels contained scraps from research on new mortar weapons, consisting of zinc, steel and aluminum in a cement casing.

DEPARTMENT OF THE ARMY  
St. Paul District Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

DULUTH HERALD

DULUTH MINN.

20 JUNE 1977

EDITORIAL

Those elusive barrels

After spending three days and \$12,000 of the public's money searching for barrels on the bottom of Lake Superior, the U.S. Army Corps of Engineers on June 10 called off its search.

This past Saturday, the Save Lake Superior Association said it could not accept the Corps' "excuses" for not being able to locate any of the barrels. The association demanded that the Corps continue its search.

That request seems ill-advised. For the moment, the best strategy would seem to be to drop the search.

The barrels in question, an estimated 1,400, were put in the lake between 1959 and 1971. According to Honeywell, Inc., Minneapolis, the barrels were filled with then-classified materials used for making armaments. More specifically, Honeywell said the barrels contained scraps of zinc, steel and aluminum poured into the barrels in a mixture of cement.

Presence of the barrels first became public information after a commercial fisherman brought some of the barrels to the surface with his nets. After a concern was expressed that the barrels might contain chemically-toxic materials, the Corps agreed to try to find some of the barrels to examine the contents.

Three days of searching in waters 10 to 12 miles up the North Shore from Duluth, however, proved futile. Barrels once thought to be in a specific, known location had apparently been moved into deeper waters by lake currents, Corps spokesmen explained.

It would always seem worthwhile to examine some of those barrels if any could be found. But there is no sense of urgency in the present situation to demand that the Corps continue to search the lake bottom now until it finds some barrels.

They have been in the lake for more than 20 years. If they were to spill any toxic materials, it would seem they would have done so by now. Also, when the controversy first began, a Corps spokesman explained that the barrels often floated on the surface when dumped, and had to be shot full of holes with rifles before they would sink. If they contained radioactive or toxic materials, that practice would have been forbidden.

If another fisherman catches a barrel in his nets, the Corps should have a look. Or if more sophisticated equipment could be found to make location of the barrels easier, another search would be warranted. But under present circumstances, further searching isn't justified.

DEPARTMENT OF THE ARMY  
St. Paul District, Corps of Engineers  
Lake Superior Area  
Canal Park  
Duluth, Minnesota 55802

THE EVENING TELEGRAM

SUPERIOR, WISC.

21 JUNE 1977

HEARING CONTINUES HERE

LAKES WATER QUALITY  
REPORT HIT, PRAISED

By Mike Payton  
Telegram Staff Writer

A three-volume, \$14 million study commissioned in 1972 to deal with water quality in Lakes Superior and Huron came under fire and also was applauded Monday night in the opening session of a two-day hearing here by the International Joint Commission.

The purpose of the local session, which continued Tuesday at the Holiday Inn, is to gain public input on the report so that the IJC can make recommendations to the U.S. and Canadian governments on protecting the water quality, according to Henry P. Smith III, chairman of the American section of the IJC who moderated the session.

Dr. Gary Glass, of the Duluth Environmental Research Laboratory, who assisted in the preparation of the lengthy report, was the first witness and also first to take it to task.

Glass said the \$14 million investment may not have paid the expected returns because of the variety of views presented by the 80 contributing authors.

Falls Short

Glass said the report falls short in its attempts to provide detailed information on pollutants in both lakes and does not provide baseline information for water quality.

He suggested that more data is needed on methods of determining the amounts of pollutants in fish and in water and the relationship between the two.

According to Glass, the guidelines are different for determining the amounts of parts per million of toxic pollutants in fish and the amount by parts per trillion of pollutants in water.

Comparability of data used in different projects illustrated in the report is difficult because of the vagueness of that data.

## Barrels

He, like another witness after him, urged the IJC to use the clout its international status carries to find out more about the nature of some 1,400 barrels dumped in Lake Superior off Duluth several years ago.

Those barrels are said to contain munitions scrap and were the target of an unsuccessful search here by the U.S. Army Corps of Engineers within the past several days.

Glass intimated that the two governments have a reluctance to dig deep enough into the situation of the barrels and other matters because of the possible embarrassment to someone.

Commander Charles Ross of the U.S. section view and argues such questions. governments in and of them with Glass' and do pursue

Glass also urged the IJC to make available to the general public some of the supporting data which led the Upper Lakes Reference Group, which authored the study at the IJC's direction, to submit some 42 recommendations on protection of the two lakes.

## Technology

He said the technology is available for the reference group to provide more detailed data on pollutants in their lakes and their effect on water and aquatic life.

Dr. William Swenson, assistant professor of biology at the University of Wisconsin-Superior, added color to the hearings when he charged that the report does not adequately address the effects of introducing exotic fish species into Lake Superior.

Swenson said that smelt, which were intentionally introduced into the Great Lakes, are responsible for the collapse of the nine-million-pound per-year herring catch in Western Lake Superior because adult smelt feed off herring larvae.

## "Unstable"

Terming the smelt population as "unstable," Swenson also noted that pink salmon released into the lake could be as big a problem as the sea lamprey they are supposed to control.

He said the problem is sensitive because it is political in nature and Smith agreed, noting that sport fishing for salmon in Lake Michigan has moved ahead of commercial fishing in prominence.

Swenson urged that fisheries responsible to both governments should be under stricter controls as to the introduction of new species before any such actions are taken.



He said the policy of "let's try it and see how it works" should be reversed to detailed studies of the possible effects of new species before they are turned loose in the largest of the Great Lakes.

Swenson said exotic species "are one pollutant which magnifies itself. It does not degrade and is uncontrollable."

"A Whole Page?"

When reminded by Chris Timm of the reference group's American section that the problem of exotic species is addressed on a page of the report, Swenson asked humorously, "A whole page?"

He said that the biological system of the lake is going to be upset with almost any introduction of non-native fish.

"The International Joint Commission could apply a little pressure on agencies of both governments who may be experimenting a little more than they should."

Dr. Alden Lind, of the Save Lake Superior Association, said there is a "manifest ambivalence" in the report regarding suggested tolerance levels for toxic pollutants, but also was high in his praise of the document.

Lind, a noted regional environmentalist, suggested that the IJC implement monitoring of new pollutants on their probable effects before they become a part of the lakes system.

"We should address the question of how much we know about how bad things are rather than merely recognizing that things are bad and shouldn't be allowed to get any worse," Lind stated.

He said, "We should do some quizzing of various agencies as to what has already been dumped into the lake," Lind said in a reference to the situation of the barrels dumped off of the Duluth shore several years ago.

Lind concurred with the reference group's recommendations that Reserve Mining Company's discharge of 67,000 tons of taconite tailings into Lake Superior each day be halted immediately.

The group also suggested that drinking water standards be established for asbestos contained in those tailings.

Back to the Lake

Lind said Reserve's solution to the dumping problem, an on-land disposal site, leaves several questions unanswered, one of which is how to control the airborne emission of asbestos fibers back into the lake when the on-land disposal site is used.

He also urged stricter controls over the types of cargoes being carried on ships plying the Great Lakes so that proper countermeasures can be implemented when a vessel sinks.

Dr. Albert Dickas of the Center for Lake Superior Environmental Studies at the University of Wisconsin-Superior, wanted to know why the problem of shoreline erosion was not adequately addressed in the report.

#### Complexity

Timm, who heads the surveillance and analysis division of District Five for the Environmental Protection Agency, said there is a difficulty in determining which erosion is caused by nature and which by man and that the complexity of that situation calls for more study time than was allowed.

The IJC is an international agency charged with the responsibility of recommending protection measures for all U.S.-Canadian boundary areas to both governments.

Smith explained that the testimony presented here and in subsequent hearings at Thunder Bay, Ontario and Houghton, Mich., this week, and in Canada next month, will be reviewed extensively before the final IJC recommendations are compiled.

Representing the Canadian section of the head table were Professor Maxwell Cohen, chairman of the Canadian group, and Bernard Beupre', Richi-leau, Quebec.

Victor Smith, Illinois, is the other American on the panel. Keith Henry, a Vancouver, British Columbia engineer, is the other Canadian on the IJC and is not in attendance.

The responsibility to undertake the reference group's study and hold the public hearings was conferred on the IJC in a bi-national water quality agreement signed by the U.S. and Canada in 1972.

DRSAR-ISE

MEMORANDUM FOR RECORD:

SUBJECT: Cost of Records Search and Barrel Retrieval Operations;  
Classified Scrap in Lake Superior

The subject action required expenditure of the following funds:

a. Direct Costs:

(1) Contract document search	-	\$ 550	TDY
(2) Deposition taking	-	150	TDY
(3) Coordination visits	-	600	TDY
(4) Corps of Engineers involvement	-	10,000	Equipment Rental
(5) Army diver costs	-	2,500	TDY and Equipment Rental
		<u>\$13,800</u>	

b. Indirect Costs:

Salaries of all government employees estimated to be 1,200 man-hours  
@ \$15/hour = \$18,000.

  
DANIEL L. WILKING  
MAJ, MSC, USAR  
Sanitary Engineer